TEST REPORT

Report No.:	BCTC2404921304-7E
Applicant:	Shenzhen Qichang Intelligent Technology Co., Ltd
Product Name:	Smart phone
Test Model:	F105
Tested Date:	2024-04-17 to 2024-04-30
Issued Date:	2024-06-03

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2BAK2-F105

Product Name:	Smart phone
Trademark:	FOSSIBOT
Model/Type Ref.:	F105 F105 Pro, F105 S, F105 Plus, F105+
Applicant:	Shenzhen Qichang Intelligent Technology Co., Ltd
Address:	Room 510, Building 7, Yunli Intelligent Park, No. 7, Bantian Street, Longgang , Shenzhen
Manufacturer:	Shenzhen Qichang Intelligent Technology Co., Ltd
Address:	Room 510, Building 7, Yunli Intelligent Park, No. 7, Bantian Street, Longgang , Shenzhen
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2024-04-17
Sample tested Date:	2024-04-17 to 2024-04-30
Issue Date:	2024-06-03
Test Standards:	IEEE Std C95.1, 2019 IEEE Std 1528™-2013 FCC Part 2.1093
Test Results:	PASS
Remark:	This is SAR test report

Tested by:

Min Zhi Cheng/ Project Handler

Approved by:

Zero Zhou/ Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

Table Of Content

(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2404921304-7E	2024-06-03	Original	Valid

2. Test Standards

IEEE Std C95.1-2019: IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz. It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.
IEEE Std 1528™-2013: IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.
FCC Part 2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices
KDB 447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting v01r02: RF Exposure Compliance Reporting and Documentation Considerations
KDB 248227 D01 802.11 Wi-Fi SAR v02r02: SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS
KDB 941225 D01 3G SAR Procedures: 3G SAR MEAUREMENT PROCEDURES
KDB 941225 D05 SAR for LTE Devices: SAR EVALUATION CONSIDERATIONS FOR LTE DEVICES
KDB 941225 D06 Hotspot Mode v02r01: SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES
KDB 648474 D04 Handset SAR v01r03: SAR EVALUATION CONSIDERATIONS FOR WIRELESS HANDSETS

3. Test Summary

The maximum results of Specific Absorption Rate (SAR) have found during testing are as follows:

Frequency Band	Report SAR1g (W/kg)		SAR1g Limit (W/kg)
	Head	Body	
Bluetooth	0.067	0.067	1.6
WIFI	0.790	0.869	
GSM	0.227	0.794	
WCDMA	0.309	0.775	
LTE	0.536	1.091	
Simultaneous Transmission	1.095	1.540	

The device in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-2019, and had been tested in accordance with the measurement methods and procedure specified in IEEE 1528-2013.

4. SAR Limits

FCC Limit (1g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average(averaged over the whole body)	0.08	0.4
Spatial Peak(averaged over any 1 g of tissue)	1.6	8.0
Spatial Peak(hands/wrists/ feet/anklesaveraged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.
Occupational/Controlled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is <3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k=2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

Therefore, the measurement uncertainty is not required.

6. Product Information and Test Setup

6.1 Product Information

Model/Type reference:	F105 F105 Pro, F105 S, F105 Plus, F105+
Model differences:	All the model are the same circuit and RF module, except model names and appearance of the color.
Bluetooth Version:	5.1
Hardware Version:	E361_MAIN_PCB_V1.1
Software Version:	FOSSiBOT_F105_F
Ratings:	DC 5V from adapter/DC 3.87V from battery
Adapter Information:	Model: TPA-418G050200UU01 Input: 100-240V- 50/60Hz 0.3A Output: 5.0V ⎓ 2.0A 10.0W

BDR, EDR

Operation Frequency:	2402-2480MHz
Type of Modulation:	GFSK, π/ 4 DQPSK, 8DPSK
Number Of Channel	79CH
Antenna installation:	Internal antenna
Antenna Gain:	0.8 dBi Remark: ☐ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☒ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

BLE

Operation Frequency:	2402-2480MHz
Type of Modulation:	GFSK
Number Of Channel	40CH
Antenna installation:	Internal antenna
Antenna Gain:	0.8 dBi Remark: ☐ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☒ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

WIFI 2.4G

Operation Frequency:	802.11b/g/n20MHz:2412~2462 MHz 802.11n40MHz:2422~2452 MHz
Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n Up to 150Mbps
Type of Modulation:	OFDM/DSSS
Number Of Channel	802.11b/g/n20MHz:11 CH 802.11n40MHz: 7 CH
Antenna Gain:	0.8 dBi Remark: ☐ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☒ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

WIFI 5G

IEEE 802.11 WLAN Mode Supported	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac(40MHz channel bandwidth) 802.11ac(80MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n(HT20); 5190-5230MHz for 802.11n(HT40); 5210MHz for 802.11 ac80; 5745-5825 MHz for 802.11a/n(HT20); 5755-5795 MHz for 802.11n(HT40); 5775MHz for 802.11 ac80;
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-MCS
Type of Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac;
Number Of Channel	4 channels for 802.11a/n20 in the 5180-5240MHz band ; 2 channels for 802.11 n40 in the 5190-5230MHz band ; 1 channels for 802.11 ac80 in the 5210MHz band ; 5 channels for 802.11a/n20 in the 5745-5825MHz band ; 2 channels for 802.11 n40 in the 5755-5795MHz band ; 1 channels for 802.11 ac80 in the 5775MHz band
Antenna installation:	Internal antenna
Antenna Gain:	5.1G: 1.1 dBi 5.8G: 1.1 dBi Remark: ☐ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☒ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

2G, 3G	
Operation Frequency:	GSM/GPRS/EGPRS 850: TX: 824~849MHz; RX: 869~894MHz; GSM/GPRS/EGPRS 1900: TX:1850~1910MHz; RX:1930~1990MHz; WCDMA Band II: TX: 1852.40~1907.60MHz; Rx: 1932.60~1987.40MHz; WCDMA Band IV: TX: 1712.40~1752.60MHz; RX: 2112.60 – 2452.40MHz WCDMA Band V: TX: 826.40~846.60MHz; RX: 871.40~ 891.60MHz;
GPRS Class:	Class 12
Max RF Output Power:	GSM/GPRS/EGPRS 850: 34.03 dBm, GSM/GPRS/EGPRS 1900: 31.61 dBm WCDMA Band II: 24.33 dBm WCDMA Band IV: 24.28 dBm WCDMA Band V: 24.00 dBm
Type of Modulation:	GSM with GMSK Modulation WCDMA Mode with BPSK Modulation HSDPA Mode with QPSK, 16QAM Modulation HSUPA Mode with QPSK, 16QAM Modulation
Type of Emission:	GSM/GPRS 850: 253KGXW EGPRS 850:249KG7W GSM/GPRS 1900: 250KGXW EGPRS 1900:248KG7W WCDMA Band II: 4M19F9W WCDMA Band IV: 4M20F9W WCDMA Band V: 4M19F9W
Antenna installation:	Internal antenna
Antenna Gain:	GSM850: 0.2 dBi GSM1900: 1.5 dBi WCDMA Band II: 1.3 dBi WCDMA Band IV: 1.1 dBi WCDMA Band V: 0.2 dBi Remark: ☐ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☒ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.
Connecting I/O Port(s)	Please refer to the User's Manual

4G

Model/Type reference:	F105
Model differences:	F105 Pro, F105 S, F105 Plus, F105+, iHunt Titan P10000 Pro All the model are the same circuit and RF module, except model names and appearance of the color.
Hardware Version:	E361_MAIN_PCB_V1.1
Software Version:	E361_QC_F05_8768_U0_V1.2.4.1_S240403_userdebug
Tx Frequency:	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500MHz-2570MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 17: 704MHz-716MHz
Rx Frequency:	LTE Band 2: 1930 MHz ~ 1990 MHz LTE Band 4: 2110 MHz ~ 2155 MHz LTE Band 5: 869 MHz ~ 894 MHz LTE Band 7: 2620MHz-2690MHz LTE Band 12: 729 MHz ~ 746 MHz LTE Band 17: 734MHz-746MHz
Bandwidth:	LTE Band 2: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz LTE Band 4: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz LTE Band 5: 1.4MHz /3MHz /5MHz /10MHz LTE Band 7: 5MHz /10MHz /15MHz /20MHz LTE Band 12: 1.4MHz /3MHz /5MHz /10MHz LTE Band 17: 5MHz /10MHz
The Max RF Output Power (EIRP/ERP)	LTE Band 2: 26.63 dBm LTE Band 4: 25.8 dBm LTE Band 5: 22.55 dBm LTE Band 7: 26.28 dBm LTE Band 12: 22.29 dBm LTE Band 17: 21.84 dBm
99% Occupied Bandwidth:	LTE Band 2: 18M1W7D LTE Band 4: 18M0W7D LTE Band 5: 9M03W7D LTE Band 7: 18M0W7D LTE Band 12: 9M06W7D LTE Band 17: 9M00G7D
Type of Modulation:	QPSK/16QAM
Antenna Type:	Internal Antenna
Antenna Gain:	LTE Band 2: 1.3 dBi LTE Band 4: 1.1 dBi LTE Band 5: 0.2 dBi LTE Band 7: 1.2 dBi LTE Band 12: -0.1 dBi LTE Band 17: -0.1 dBi Remark: ☐ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☒ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.
Connecting I/O Port(s):	Please refer to the User's Manual

6.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

6.3 Support Equipment

Cable of Product

No.	Cable Type	Quantity	Provider	Length (m)	Shielded	Note
1	--	--	Applicant	---	Yes/No	--
2	--	--	BCTC	--	Yes/No	--

No.	Device Type	Brand	Model	Series No.	Note
1.	---	---	---	---	---
2.	--	--	--	--	--

Notes:
1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer’s requirements and conditions for the intended use.

6.4 Test Environment

1. Normal Test Conditions:

Humidity(%):	35-75
Atmospheric Pressure(kPa):	95-105
Temperature(℃):	18-25

2. Extreme Test Conditions:
N/A

7. Test Facility and Test Instrument Used

7.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850
A2LA certificate registration number is: CN1212
ISED Registered No.: 23583
ISED CAB identifier: CN0017

7.2 Test Instrument Used

Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
PC	DELL	\	\	N/A	N/A
SAR Measurement system	SATIMO	\	\	N/A	N/A
Signal Generator	Keysight	83711B	US37100131	Aug. 29, 2023	Aug. 28, 2024
Multimeter	Keithley	1160271	\	Nov. 10, 2023	Nov 09, 2024
S-parameter Network Analyzer	R&S	ZVB 8	101353	Dec. 07, 2023	Dec. 06, 2024
Wideband Radio Communication Tester	R&S	CMW500	\	Nov. 10, 2023	Nov 09, 2024
E SAR PROBE 6GHz	MVG	SSE2	2623-EPGO-420	July 18, 2023	July 17, 2024
DIPOLE 750	SATIMO	SID 750	SN 47/21 DIP 0G750-620	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 835	SATIMO	SID 835	SN 47/21 DIP 0G835-621	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 1800	SATIMO	SID 1800	SN 47/21 DIP 1G800-623	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 1900	SATIMO	SID 1900	SN 47/21 DIP 1G900-624	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 2450	SATIMO	SID 2450	SN 47/21 DIP 2G450-627	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 2600	SATIMO	SID 2600	SN 47/21 DIP 2G600-628	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 5000	SATIMO	SID 5000	SN 47/21 DIP 5G000-629	Nov. 25, 2021	Nov. 24, 2024
COMOSAR OPENCoaxial Probe	SATIMO	\	\	Nov. 18, 2023	Nov. 17, 2024
SAR Locator	SATIMO	\	\	Nov. 18, 2023	Nov. 17, 2024
Communication Antenna	SATIMO	\	\	Nov. 18, 2023	Nov. 17, 2024
FEATURE PHONEPOSITIONING DEVICE	SATIMO	\	\	N/A	N/A
DUMMY PROBE	SATIMO	\	\	N/A	N/A
SAM Phantom	MVG	\	SN 13/09 SAM68	N/A	N/A
Liquid measurement Kit	HP	85033D	3423A08186	N/A	N/A
Power meter	Agilent	E4419	\	May 15, 2023	May 14, 2024
Power meter	Agilent	E4419	\	May 15, 2023	May 14, 2024
Power sensor	Agilent	E9300A	\	May 15, 2023	May 14, 2024
Power sensor	Agilent	E9300A	\	May 15, 2023	May 14, 2024
Directional Coupler	Krytar 158020	131467	\	Nov. 10, 2023	Nov 09, 2024
Thermometer	BTE	\	\	Dec. 02, 2023	Dec. 01, 2024
Broad Band Tissue Simulation Liquid	Schmid	\	\	N/A	N/A

Note:
Per KDB865664D01 requirements for dipole calibration, the test laboratory has adopted three year extended calibration interval. Each measured dipole is expected to evalute with following criteria at least on annual interval.

1. There is no physical damage on the dipole;
2. System check with specific dipole is within 10% of calibrated values;
3. The most recent return-loss results, measued at least annually, deviates by no more than 20% from the previous measurement;
4. The most recent measurement of the real or imaginary parts of the impedance, measured at least annually is within 5Ω from the provious measurement.

8. Specific Absorption Rate (SAR)

8.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techiques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

8.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$\mathbf{SAR} = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\mathbf{dm}}\right) = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\boldsymbol{\rho}\mathbf{dv}}\right)$$

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$\mathbf{SAR} = \mathbf{C}\left(\frac{\boldsymbol{\delta}\mathbf{T}}{\boldsymbol{\delta}\mathbf{t}}\right)$$

Where: C is the specific heat capacity, δ T is the temperature rise and δ t is the exposure duration, or related to the

electrical field in the tissue by

$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}|\mathbf{E}|^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

9. SAR Measurement System

9.1 The Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:
- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

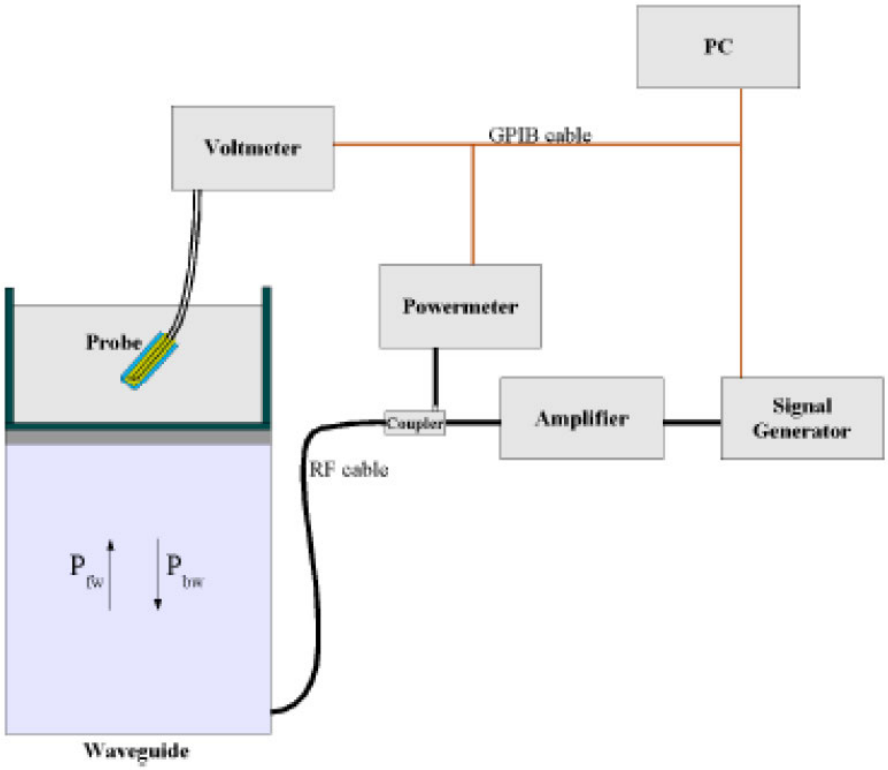
The following figure shows the system.

The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

9.2 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 46/21 EPGO362 with following specifications is used
- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 5 mm
- Distance between probe tip and sensor center: 2.10mm
- Distance between sensor center and the inner phantom surface: 4 mm (repeatability better than +/- 1mm)
- Probe linearity: ＜0.25 dB
- Axial Isotropy: ＜0.25 dB
- Spherical Isotropy: ＜0.50 dB
- Calibration range: 835 to 2500MHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and surface normal line:1ess than 30°
Probe calibration is realized, in compliance with EN 62209-1 and IEEE 1528 STD, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209-1 annex technique using reference guide at the five frequencies.



$$SAR = \frac{4(p_{\int w} - p_{Pbw})}{ab\delta} cos^2 \left(\pi \frac{y}{a}\right) c^{(2\pi/\delta)}$$

Where :
Pfw = Forward Power
Pbw = Backward Power
a and b =Waveguide dimensions
l = Skin depth

Keithley configuration:
Rate = Medium; Filter = ON; RDGS = 10; Filter type = Moving Average; Range auto after each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

CF(N)=SAR(N)/Vlin(N) (N=1,2,3)

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

Vlin(N)=V(N)*(1+V(N)/DCP(N)) (N=1,2,3)

where DCP is the diode compression point in mV.

9.3 Probe Calibration Process

Dosimetric Assessment Procedure
Each E-Probe/Probe Amplifier combination has unique calibration parameters. SATIMO Probe calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm2) using an with CALISAR, Antenna proprietary calibration system.

Free Space Assessment Procedure
The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1mW/cm2.

Temperature Assessment Procedure
E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated head tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where:
Δ t = exposure time (30 seconds),
C = heat capacity of tissue (brain or muscle),
Δ T = temperature increase due to RF exposure.

SAR is proportional to ΔT/Δt, the initial rate of tissue heating, before thermal diffusion takes place. The electric field in the simulated tissue can be used to estimate SAR by equating the thermally derived SAR to that with the E- field component.

$$SAR = \frac{|E|^2 \cdot \sigma}{\rho}$$

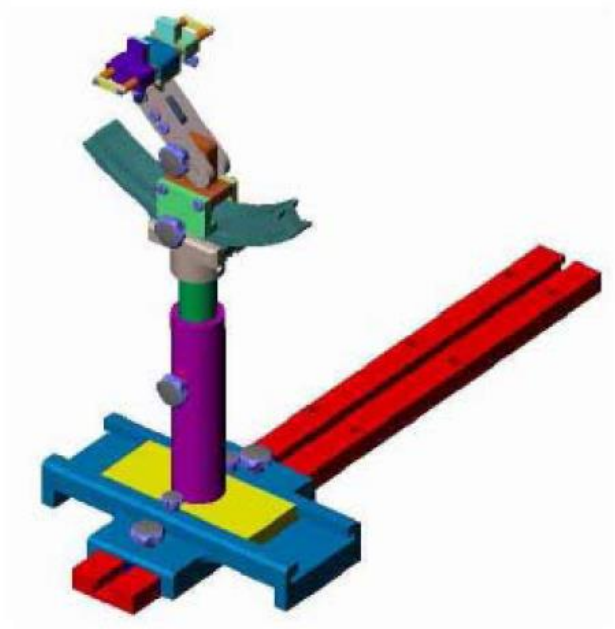
Where:
σ = simulated tissue conductivity,
ρ = Tissue density (1.25 g/cm3 for brain tissue)

9.4 Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

9.5 Device Holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.



System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

10. Tissue Simulating Liquids

10.1 Composition of Tissue Simulating Liquid

For the measurement of the field distribution inside the SAM phantom with SMTIMO, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. Please see the following photos for the liquid height.

Liquid Height for Body SAR

The Composition of Tissue Simulating Liquid

Frequency (MHz)	Water (%)	Salt (%)	1,2-Propane diol (%)	HEC (%)	Preventol (%)	DGBE (%)
Head/Body						
835	40.3	1.4	57.9	0.2	0.2	0
900	40.3	1.4	57.9	0.2	0.2	0
1800-2000	55.2	0.3	0	0	0	44.5
2450	55.0	0.1	0	0	0	44.9
2600	54.9	0.1	0	0	0	45.0

Frequency (MHz)	Water (%)	Hexyl Carbitol (%)	Triton X-100 (%)
Head/Body			
5000-6000	65.52	17.24	17.24

10.2 Limit

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters

computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Target Frequency (MHz)	Head	
	Conductivity (σ)	Permittivity (ε_r)
150	0.76	52.3
300	0.87	45.3
450	0.87	43.5
750	0.89	41.9
835	0.90	41.5
900	0.97	41.5
915	0.98	41.5
1450	1.20	40.5
1610	1.29	40.3
1800-2000	1.40	40.0
2450	1.80	39.2
2600	1.96	39.0
3000	2.40	38.5
5200	4.66	36.0
5400	4.86	35.8
5600	5.07	35.5
5800	5.27	35.3

10.3 Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an R&S ZVB 8. Dielectric Probe Kit and an Agilent Network Analyzer.

Calibration Result for Dielectric Parameters of Tissue Simulating Liquid

Frequency (MHz)	Liquid	Target (σ)	Target (εr)	Measured (σ)	Measured (εr)	Delta (σ)%	Delta (εr)%	Limit (%)	Temp. TSL (°C)	Date
750	Head	0.89	41.90	0.898	43.138	0.90	2.95	±5	23.3	28/04/2024
835	Head	0.90	41.50	0.869	41.037	-3.44	-1.12	±5	23.3	28/04/2024
1800	Head	1.40	40.00	1.349	39.155	-3.64	-2.11	±5	23.3	11/04/2024
1900	Head	1.40	40.00	1.362	40.132	-2.71	0.33	±5	23.3	11/04/2024
2450	Head	1.80	39.20	1.766	40.338	-1.89	2.90	±5	22.8	30/04/2024
2600	Head	1.96	39.00	1.985	40.172	1.28	3.01	±5	23.4	13/04/2024
5200	Head	4.66	36.00	4.775	35.460	2.47	-1.50	±5	22.8	30/04/2024
5800	Head	5.27	35.30	5.413	35.755	2.71	1.29	±5	22.8	30/04/2024

Remark:

1. The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.
2. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

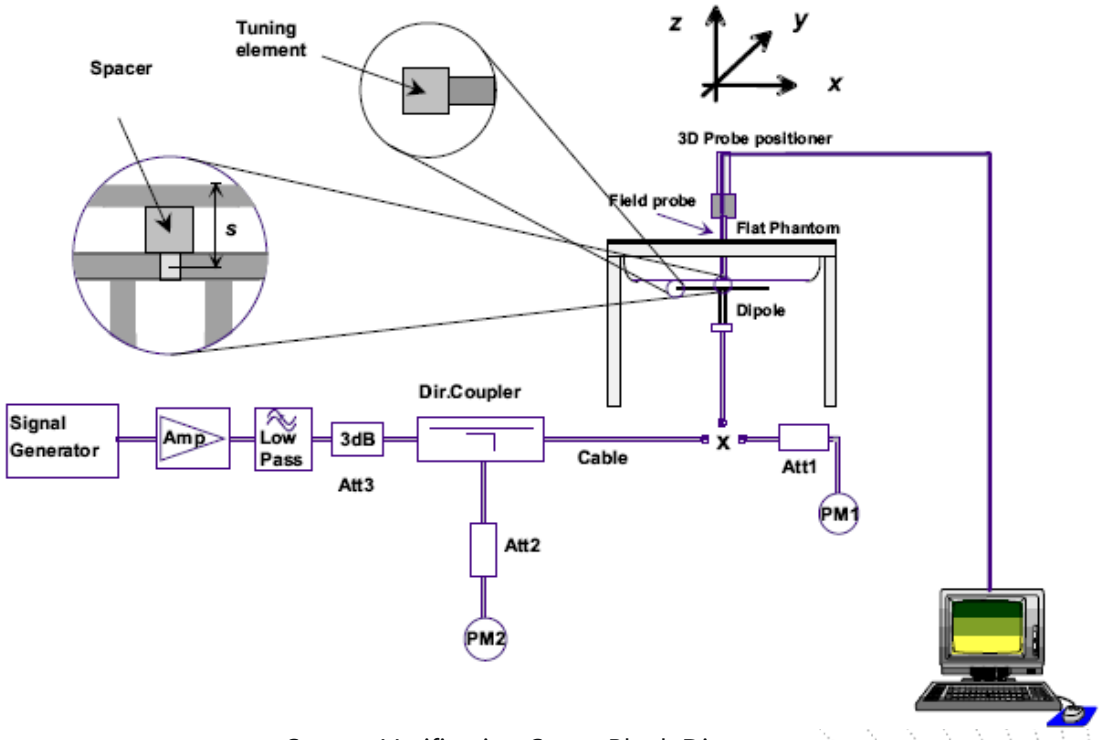
11. System Check

11.1 Purpose of System Performance Check

At the device test frequencies. System check verifies the measurement repeatability of a SAR system before compliance testing and is not a validation of all system specifications. The latter is not required for testing a device but is mandatory before the system is deployed. The system check detects possible short-term drift and unacceptable measurement errors or uncertainties in the system.

11.2 System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator at frequency 600MHz-6000MHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The output power on dipole port must be calibrated to 20 dBm (100 mW) before dipole is connected.



System Verification Setup Block Diagram

Setup Photo of Dipole Antenna

11.3 Validation Results

Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10 %. The following table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion.

Frequency (MHz)	Power	Measured SAR_{1g} (W/Kg)	Normalize to 1 Watt	Drift (%)	1W Target SAR_{1g} (W/Kg)	Difference Percentage (%)	Limit (%)	Liquid Temp	Date
750	250 mW	2.203	8.810	2.122	8.58	2.681	±10	23.5	28/04/2024
835	250 mW	2.449	9.797	0.879	10.01	-2.128	±10	23.5	28/04/2024
1800	250 mW	9.756	39.024	1.436	39.74	-1.802	±10	23.1	11/04/2024
1900	250 mW	10.792	43.168	0.779	41.26	4.624	±10	23.1	11/04/2024
2450	250 mW	13.278	53.113	3.210	55.16	-3.711	±10	23.2	30/04/2024
2600	250 mW	14.214	56.855	-1.060	56.5	0.628	±10	23.0	13/04/2024
5200	250 mW	19.884	79.536	-2.407	76.41	4.091	±10	23.2	30/04/2024
5800	250 mW	19.499	77.994	-2.535	76.49	1.966	±10	23.2	30/04/2024

12. EUT Testing Position

12.1 Define Two Imaginary Lines on the Handset

(a) The vertical centerline passes through two points on the front side of the handset - the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic
output. The horizontal line is also tangential to the face of the handset at point A.

(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

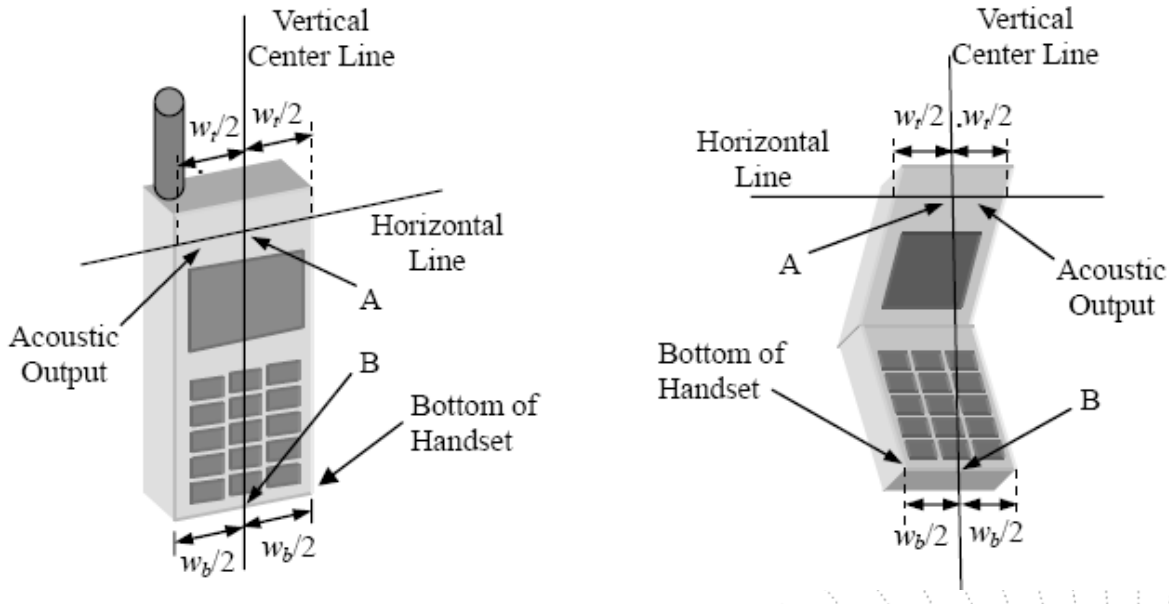


Illustration for Handset Vertical and Horizontal Reference Lines

12.2 Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see below).

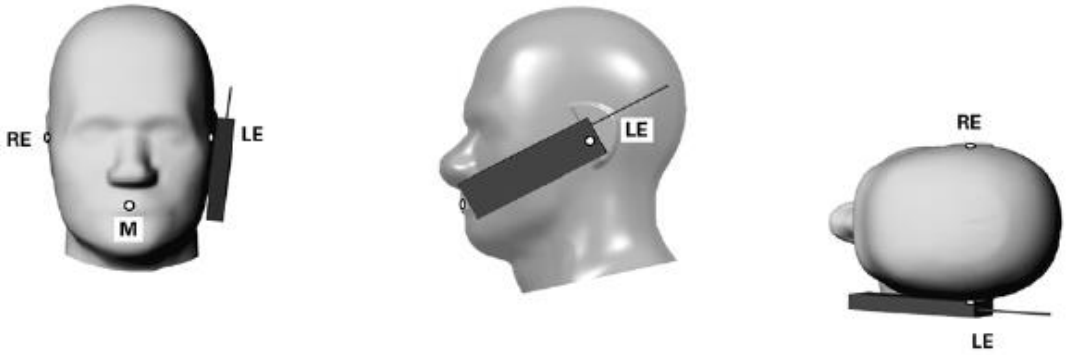


Illustration for Cheek Position

12.3 Tilted Position

(a) To position the device in the “cheek” position described above.

(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see below).

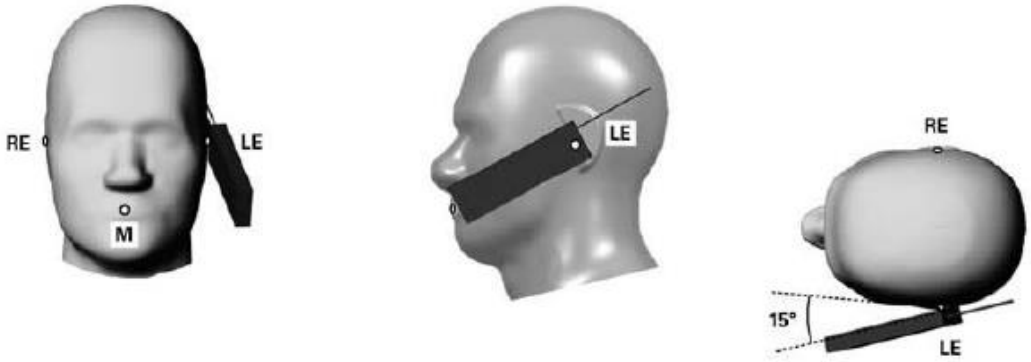
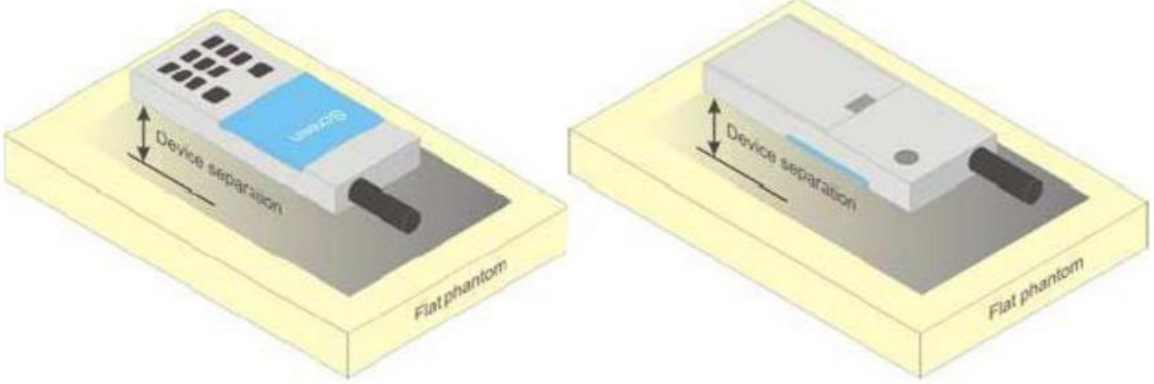


Illustration for Tilted Position

12.4 Body Position

A typical example of a body-worn device is a Mobile Phone , wireless enabled PDA or other battery operated wireless device with the ability to transmit while mounted on a person’s body using a carry accessory approved by the wireless device manufacturer.



13. SAR Measurement Procedures

13.1 Measurement Procedures

The measurement procedures are as follows:
(a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the highest power channel.
(b) Keep EUT to radiate maximum output power or 100% factor (if applicable)
(c) Measure output power through RF cable and power meter.
(d) Place the EUT in the positions as Annex D demonstrates.
(e) Set scan area, grid size and other setting on the SATIMO software.
(f) Measure SAR results for the highest power channel on each testing position.
(g) Find out the largest SAR result on these testing positions of each band
(h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:
(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

13.2 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The SATIMO software includes all numerical procedures necessary to evaluate the spatial peak SAR value.
The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.
The entire evaluation of the spatial peak values is performed within the post-processing engine. The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:
(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

13.3 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures 5x5x7 points with step size 8, 8 and 5 mm for 300 MHz to 3 GHz, and 8x8x8 points with step size 4, 4 and 2.5 mm for 3 GHz to 6 GHz. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 mm ± 1 mm	½·δ·ln(2) mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

13.4 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing (step-size is 4, 4 and 2.5 mm). When all volume scan were completed, the software can combine and subsequently superpose these measurement data to calculating the multiband SAR.

13.5 SAR Averaged Methods

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10g and 1 g requires a very fine resolution in the three dimensional scanned data array.

13.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In SATIMO measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

14. SAR Test Result

14.1 Conducted RF Output Power

BDR, EDR			
Mode	**Frequency (MHz)**	**Conducted Power (dBm)**	**Tune-up power (dBm)**
1-DH1	2402	0.34	2.0
1-DH1	2441	1.40	
1-DH1	2480	1.47	
2-DH1	2402	-0.26	1.5
2-DH1	2441	0.78	
2-DH1	2480	0.87	
3-DH1	2402	-0.24	1.5
3-DH1	2441	0.85	
3-DH1	2480	0.92	

BLE			
Mode	**Frequency (MHz)**	**Conducted Power (dBm)**	**Tune-up power (dBm)**
BLE 1M	2402	-4.57	-3.0
BLE 1M	2440	-3.48	
BLE 1M	2480	-3.42	

Note:
Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] •[√f(GHz)] ≤ 3.0 for1-g SAR and ≤ 7.5 for 10-g extremity SAR
f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation
The result is rounded to one decimal place for comparison

Turn up Power (dBm)	Turn up Power (mW)	Separation Distance (mm)	Frequency (GHz)	Result	Exclusion Thresholds
2.0	1.58	5	2.48	0.50	3

Per KDB 447498 D01v06, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
According to the calculation results in the table above, Bluetooth SAR does not need to be tested.

WIFI 2.4G			
Mode	**Frequency (MHz)**	**Conducted Power (dBm)**	**Tune-up power (dBm)**
b	2412	11.36	12.5
b	2437	**12.04**	
b	2462	11.76	
g	2412	10.23	11.5
g	2437	10.91	
g	2462	10.69	
n20	2412	9.25	10.5
n20	2437	10.04	
n20	2462	9.83	
n40	2422	8.81	9.5
n40	2437	9.03	
n40	2452	9.10	

WIFI 5.1G			
Mode	**Frequency (MHz)**	**Conducted Power (dBm)**	**Tune-up power (dBm)**
a	5180	**10.62**	11.0
a	5200	9.93	
a	5240	10.19	
n20	5180	9.34	10.0
n20	5200	8.60	
n20	5240	8.98	
n40	5190	7.97	8.5
n40	5230	8.15	
ac20	5180	9.22	9.5
ac20	5200	8.63	
ac20	5240	8.97	
ac40	5190	7.91	8.5
ac40	5230	8.26	
ac80	5210	7.67	8.0

WIFI 5.8G			
Mode	**Frequency (MHz)**	**Conducted Power (dBm)**	**Tune-up power (dBm)**
a	5745	10.25	11.0
a	5785	10.15	
a	5825	**10.42**	
n20	5745	9.18	10.5
n20	5785	9.15	
n20	5825	9.87	
n40	5755	7.76	8.5
n40	5795	7.99	
ac20	5745	8.96	10.5
ac20	5785	9.04	
ac20	5825	9.87	
ac40	5755	7.85	9.5
ac40	5795	8.87	
ac80	5775	8.23	8.5

GSM - Burst Average Power (dBm)								
Band	**GSM850**			**Tune-up**	**GSM1900**			**Tune-up**
Channel	**128**	**190**	**251**		**512**	**661**	**810**	
Frequency (MHz)	**824.2**	**836.6**	**848.8**		**1850.2**	**1880**	**1909.8**	
GSM	33.91	**33.92**	33.82	34.5	**31.59**	31.55	30.88	32.0
GPRS Slot -1	34.03	34.03	33.91	34.5	31.61	31.59	30.94	32.0
GPRS Slot -2	33.03	**33.05**	32.94	33.5	30.65	**30.66**	30.05	31.0
GPRS Slot -3	30.90	30.97	30.91	31.5	28.44	28.54	28.05	29.0
GPRS Slot -4	29.67	29.81	29.77	30.5	27.40	27.48	27.02	28.0
EGPRS Slot -1	34.00	33.97	33.88	34.5	31.50	31.46	30.83	32.0
EGPRS Slot -2	32.99	33.01	32.89	33.5	30.55	30.52	29.93	31.0
EGPRS Slot -3	30.86	30.93	30.87	31.5	28.34	28.42	27.94	29.0
EGPRS Slot -4	29.64	29.78	29.73	30.0	27.29	27.36	26.89	28.0

GSM - Source-Based Time-Average Power (dBm)						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**190**	**251**	**512**	**661**	**810**
Frequency (MHz)	**824.2**	**836.6**	**848.8**	**1850.2**	**1880**	**1909.8**
GSM	24.91	24.92	24.82	22.59	22.55	21.88
GPRS Slot -1	25.03	25.03	24.91	22.61	22.59	21.94
GPRS Slot -2	27.03	**27.05**	26.94	24.65	**24.66**	24.05
GPRS Slot -3	26.65	26.72	26.66	24.19	24.29	23.80
GPRS Slot -4	26.67	26.81	26.77	24.40	24.48	24.02
EGPRS Slot -1	25.00	24.97	24.88	22.50	22.46	21.83
EGPRS Slot -2	26.99	27.01	26.89	24.55	24.52	23.93
EGPRS Slot -3	26.61	26.68	26.62	24.09	24.17	23.69
EGPRS Slot -4	26.64	26.78	26.73	24.29	24.36	23.89

Notes:
Division Factors
To average the power, the division factor is as follows:
1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.00dB
2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.00dB
3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB
4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.00dB

Band	WCDMA Band II				WCDMA Band IV			
Channel	9262	9400	9538	Tune-up	1312	1450	1513	Tune-up
Frequency (MHz)	1852.4	1880.0	1907.6		1712.4	1740	1752.6	
RMC 12.2K	**24.33**	24.20	23.95	25.0	24.26	**24.28**	24.28	24.5
HSDPA Subtest-1	23.38	23.24	22.97	24.0	23.27	23.31	23.29	24.0
HSDPA Subtest-2	23.01	22.85	22.66		22.91	22.92	22.79	
HSDPA Subtest-3	22.07	21.47	21.85		21.63	21.94	21.78	
HSDPA Subtest-4	21.62	22.08	21.57		22.18	21.94	22.05	
HSUPA Subtest-1	22.39	23.06	22.80	24.0	22.67	23.04	23.16	24.0
HSUPA Subtest-2	23.32	23.16	22.88		23.07	23.15	23.03	
HSUPA Subtest-3	21.84	21.83	22.06		21.62	22.36	21.97	
HSUPA Subtest-4	23.37	23.22	22.97		23.28	23.33	23.28	
HSUPA Subtest-5	22.22	22.40	22.40		22.11	22.75	22.28	

Band	WCDMA Band V							
Channel	4132	4182	4233	Tune-up				
Frequency (MHz)	826.4	836.4	846.6					
RMC 12.2K	23.96	**24.00**	24.00	24.5				
HSDPA Subtest-1	22.97	23.00	23.04	23.5				
HSDPA Subtest-2	22.42	22.54	22.43					
HSDPA Subtest-3	21.47	21.56	21.84					
HSDPA Subtest-4	21.15	21.87	21.66					
HSUPA Subtest-1	22.06	22.81	22.64	23.5				
HSUPA Subtest-2	22.88	22.85	22.82					
HSUPA Subtest-3	21.24	21.77	21.50					
HSUPA Subtest-4	22.96	23.02	23.03					
HSUPA Subtest-5	21.52	22.30	22.26					

Note:
1. Per KDB 941225 D01 v03, the 12.2kbps RMC mode was selected for SAR testing (the primary mode).
2. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤1/4dB higher than the primary mode (RMC12.2kbps) or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

<LTE>

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.
LTE QPSK configuration has the highest maximum average output power per 3GPP standard.

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)
Band2	1.4	18607	1	#0	QPSK	24.78
Band2	1.4	18607	1	#Mid	QPSK	24.95
Band2	1.4	18607	1	#Max	QPSK	24.79
Band2	1.4	18607	3	#0	QPSK	24.91
Band2	1.4	18607	3	#Mid	QPSK	24.91
Band2	1.4	18607	3	#Max	QPSK	24.88
Band2	1.4	18607	6	#0	QPSK	23.83
Band2	1.4	18607	1	#0	16QAM	23.94
Band2	1.4	18607	1	#Mid	16QAM	24.07
Band2	1.4	18607	1	#Max	16QAM	23.98
Band2	1.4	18607	3	#0	16QAM	24.04
Band2	1.4	18607	3	#Mid	16QAM	24.06
Band2	1.4	18607	3	#Max	16QAM	24.12
Band2	1.4	18607	6	#0	16QAM	23.02
Band2	1.4	18900	1	#0	QPSK	24.70
Band2	1.4	18900	1	#Mid	QPSK	24.85
Band2	1.4	18900	1	#Max	QPSK	24.68
Band2	1.4	18900	3	#0	QPSK	24.76
Band2	1.4	18900	3	#Mid	QPSK	24.75
Band2	1.4	18900	3	#Max	QPSK	24.74
Band2	1.4	18900	6	#0	QPSK	23.69
Band2	1.4	18900	1	#0	16QAM	23.56
Band2	1.4	18900	1	#Mid	16QAM	23.70
Band2	1.4	18900	1	#Max	16QAM	23.55
Band2	1.4	18900	3	#0	16QAM	23.88
Band2	1.4	18900	3	#Mid	16QAM	23.86
Band2	1.4	18900	3	#Max	16QAM	23.88
Band2	1.4	18900	6	#0	16QAM	22.86
Band2	1.4	19193	1	#0	QPSK	24.54
Band2	1.4	19193	1	#Mid	QPSK	24.63
Band2	1.4	19193	1	#Max	QPSK	24.54
Band2	1.4	19193	3	#0	QPSK	24.43
Band2	1.4	19193	3	#Mid	QPSK	24.45
Band2	1.4	19193	3	#Max	QPSK	24.46
Band2	1.4	19193	6	#0	QPSK	23.54
Band2	1.4	19193	1	#0	16QAM	23.50
Band2	1.4	19193	1	#Mid	16QAM	23.62
Band2	1.4	19193	1	#Max	16QAM	23.49
Band2	1.4	19193	3	#0	16QAM	23.56
Band2	1.4	19193	3	#Mid	16QAM	23.58
Band2	1.4	19193	3	#Max	16QAM	23.53
Band2	1.4	19193	6	#0	16QAM	22.63
Band2	3	18615	1	#0	QPSK	24.87
Band2	3	18615	1	#Mid	QPSK	25.24
Band2	3	18615	1	#Max	QPSK	24.86
Band2	3	18615	8	#0	QPSK	23.89
Band2	3	18615	8	#Mid	QPSK	23.85
Band2	3	18615	8	#Max	QPSK	23.84
Band2	3	18615	15	#0	QPSK	23.83
Band2	3	18615	1	#0	16QAM	24.02
Band2	3	18615	1	#Mid	16QAM	24.27

Band2	3	18615	1	#Max	16QAM	23.97
Band2	3	18615	8	#0	16QAM	22.91
Band2	3	18615	8	#Mid	16QAM	22.91
Band2	3	18615	8	#Max	16QAM	22.85
Band2	3	18615	15	#0	16QAM	22.76
Band2	3	18900	1	#0	QPSK	24.80
Band2	3	18900	1	#Mid	QPSK	25.11
Band2	3	18900	1	#Max	QPSK	24.84
Band2	3	18900	8	#0	QPSK	23.70
Band2	3	18900	8	#Mid	QPSK	23.73
Band2	3	18900	8	#Max	QPSK	23.73
Band2	3	18900	15	#0	QPSK	23.71
Band2	3	18900	1	#0	16QAM	23.65
Band2	3	18900	1	#Mid	16QAM	23.91
Band2	3	18900	1	#Max	16QAM	23.63
Band2	3	18900	8	#0	16QAM	22.72
Band2	3	18900	8	#Mid	16QAM	22.78
Band2	3	18900	8	#Max	16QAM	22.79
Band2	3	18900	15	#0	16QAM	22.85
Band2	3	19185	1	#0	QPSK	24.52
Band2	3	19185	1	#Mid	QPSK	24.72
Band2	3	19185	1	#Max	QPSK	24.49
Band2	3	19185	8	#0	QPSK	23.48
Band2	3	19185	8	#Mid	QPSK	23.59
Band2	3	19185	8	#Max	QPSK	23.55
Band2	3	19185	15	#0	QPSK	23.46
Band2	3	19185	1	#0	16QAM	23.90
Band2	3	19185	1	#Mid	16QAM	24.09
Band2	3	19185	1	#Max	16QAM	23.78
Band2	3	19185	8	#0	16QAM	22.54
Band2	3	19185	8	#Mid	16QAM	22.57
Band2	3	19185	8	#Max	16QAM	22.53
Band2	3	19185	15	#0	16QAM	22.54
Band2	5	18625	1	#0	QPSK	24.84
Band2	5	18625	1	#Mid	QPSK	25.24
Band2	5	18625	1	#Max	QPSK	24.84
Band2	5	18625	12	#0	QPSK	23.76
Band2	5	18625	12	#Mid	QPSK	23.88
Band2	5	18625	12	#Max	QPSK	23.84
Band2	5	18625	25	#0	QPSK	23.85
Band2	5	18625	1	#0	16QAM	24.10
Band2	5	18625	1	#Mid	16QAM	24.31
Band2	5	18625	1	#Max	16QAM	24.02
Band2	5	18625	12	#0	16QAM	22.80
Band2	5	18625	12	#Mid	16QAM	22.88
Band2	5	18625	12	#Max	16QAM	22.83
Band2	5	18625	25	#0	16QAM	22.88
Band2	5	18900	1	#0	QPSK	24.59
Band2	5	18900	1	#Mid	QPSK	25.02
Band2	5	18900	1	#Max	QPSK	24.63
Band2	5	18900	12	#0	QPSK	23.65
Band2	5	18900	12	#Mid	QPSK	23.78
Band2	5	18900	12	#Max	QPSK	23.73
Band2	5	18900	25	#0	QPSK	23.73
Band2	5	18900	1	#0	16QAM	23.97
Band2	5	18900	1	#Mid	16QAM	24.40
Band2	5	18900	1	#Max	16QAM	23.99

Band2	5	18900	12	#0	16QAM	22.73
Band2	5	18900	12	#Mid	16QAM	22.85
Band2	5	18900	12	#Max	16QAM	22.89
Band2	5	18900	25	#0	16QAM	22.76
Band2	5	19175	1	#0	QPSK	24.44
Band2	5	19175	1	#Mid	QPSK	24.84
Band2	5	19175	1	#Max	QPSK	24.33
Band2	5	19175	12	#0	QPSK	23.36
Band2	5	19175	12	#Mid	QPSK	23.42
Band2	5	19175	12	#Max	QPSK	23.38
Band2	5	19175	25	#0	QPSK	23.34
Band2	5	19175	1	#0	16QAM	23.58
Band2	5	19175	1	#Mid	16QAM	23.88
Band2	5	19175	1	#Max	16QAM	23.50
Band2	5	19175	12	#0	16QAM	22.04
Band2	5	19175	12	#Mid	16QAM	22.31
Band2	5	19175	12	#Max	16QAM	22.22
Band2	5	19175	25	#0	16QAM	22.29
Band2	10	18650	1	#0	QPSK	24.87
Band2	10	18650	1	#Mid	QPSK	25.00
Band2	10	18650	1	#Max	QPSK	24.87
Band2	10	18650	25	#0	QPSK	23.82
Band2	10	18650	25	#Mid	QPSK	23.84
Band2	10	18650	25	#Max	QPSK	23.92
Band2	10	18650	50	#0	QPSK	23.84
Band2	10	18650	1	#0	16QAM	24.25
Band2	10	18650	1	#Mid	16QAM	24.29
Band2	10	18650	1	#Max	16QAM	24.14
Band2	10	18650	25	#0	16QAM	22.88
Band2	10	18650	25	#Mid	16QAM	22.91
Band2	10	18650	25	#Max	16QAM	22.94
Band2	10	18650	50	#0	16QAM	22.89
Band2	10	18900	1	#0	QPSK	24.74
Band2	10	18900	1	#Mid	QPSK	24.85
Band2	10	18900	1	#Max	QPSK	24.81
Band2	10	18900	25	#0	QPSK	23.64
Band2	10	18900	25	#Mid	QPSK	23.55
Band2	10	18900	25	#Max	QPSK	23.72
Band2	10	18900	50	#0	QPSK	23.57
Band2	10	18900	1	#0	16QAM	23.54
Band2	10	18900	1	#Mid	16QAM	23.61
Band2	10	18900	1	#Max	16QAM	23.52
Band2	10	18900	25	#0	16QAM	22.36
Band2	10	18900	25	#Mid	16QAM	22.33
Band2	10	18900	25	#Max	16QAM	22.59
Band2	10	18900	50	#0	16QAM	22.46
Band2	10	19150	1	#0	QPSK	24.25
Band2	10	19150	1	#Mid	QPSK	24.24
Band2	10	19150	1	#Max	QPSK	24.12
Band2	10	19150	25	#0	QPSK	23.18
Band2	10	19150	25	#Mid	QPSK	23.10
Band2	10	19150	25	#Max	QPSK	23.33
Band2	10	19150	50	#0	QPSK	23.21
Band2	10	19150	1	#0	16QAM	22.97
Band2	10	19150	1	#Mid	16QAM	23.11
Band2	10	19150	1	#Max	16QAM	22.86
Band2	10	19150	25	#0	16QAM	22.19

Band2	10	19150	25	#Mid	16QAM	22.15
Band2	10	19150	25	#Max	16QAM	22.34
Band2	10	19150	50	#0	16QAM	22.27
Band2	15	18675	1	#0	QPSK	24.92
Band2	15	18675	1	#Mid	QPSK	25.33
Band2	15	18675	1	#Max	QPSK	24.77
Band2	15	18675	36	#0	QPSK	23.88
Band2	15	18675	36	#Mid	QPSK	23.95
Band2	15	18675	36	#Max	QPSK	23.93
Band2	15	18675	75	#0	QPSK	23.91
Band2	15	18675	1	#0	16QAM	23.90
Band2	15	18675	1	#Mid	16QAM	24.09
Band2	15	18675	1	#Max	16QAM	23.59
Band2	15	18675	36	#0	16QAM	22.83
Band2	15	18675	36	#Mid	16QAM	22.88
Band2	15	18675	36	#Max	16QAM	22.83
Band2	15	18675	75	#0	16QAM	22.88
Band2	15	18900	1	#0	QPSK	24.45
Band2	15	18900	1	#Mid	QPSK	24.72
Band2	15	18900	1	#Max	QPSK	24.17
Band2	15	18900	36	#0	QPSK	23.28
Band2	15	18900	36	#Mid	QPSK	23.35
Band2	15	18900	36	#Max	QPSK	23.44
Band2	15	18900	75	#0	QPSK	23.40
Band2	15	18900	1	#0	16QAM	23.54
Band2	15	18900	1	#Mid	16QAM	23.96
Band2	15	18900	1	#Max	16QAM	23.61
Band2	15	18900	36	#0	16QAM	22.34
Band2	15	18900	36	#Mid	16QAM	22.39
Band2	15	18900	36	#Max	16QAM	22.44
Band2	15	18900	75	#0	16QAM	22.39
Band2	15	19125	1	#0	QPSK	24.13
Band2	15	19125	1	#Mid	QPSK	24.37
Band2	15	19125	1	#Max	QPSK	23.90
Band2	15	19125	36	#0	QPSK	23.39
Band2	15	19125	36	#Mid	QPSK	23.26
Band2	15	19125	36	#Max	QPSK	23.30
Band2	15	19125	75	#0	QPSK	23.35
Band2	15	19125	1	#0	16QAM	23.27
Band2	15	19125	1	#Mid	16QAM	23.58
Band2	15	19125	1	#Max	16QAM	23.07
Band2	15	19125	36	#0	16QAM	22.45
Band2	15	19125	36	#Mid	16QAM	22.24
Band2	15	19125	36	#Max	16QAM	22.28
Band2	15	19125	75	#0	16QAM	22.32
Band2	20	18700	1	#0	QPSK	24.75
Band2	20	18700	1	#Mid	QPSK	25.08
Band2	20	18700	1	#Max	QPSK	24.59
Band2	20	18700	50	#0	QPSK	23.69
Band2	20	18700	50	#Mid	QPSK	23.81
Band2	20	18700	50	#Max	QPSK	23.45
Band2	20	18700	100	#0	QPSK	23.65
Band2	20	18700	1	#0	16QAM	23.61
Band2	20	18700	1	#Mid	16QAM	23.72
Band2	20	18700	1	#Max	16QAM	23.33
Band2	20	18700	50	#0	16QAM	22.49
Band2	20	18700	50	#Mid	16QAM	22.61

Band2	20	18700	50	#Max	16QAM	22.26
Band2	20	18700	100	#0	16QAM	22.33
Band2	20	18900	1	#0	QPSK	24.04
Band2	20	18900	1	#Mid	QPSK	24.39
Band2	20	18900	1	#Max	QPSK	24.04
Band2	20	18900	50	#0	QPSK	23.22
Band2	20	18900	50	#Mid	QPSK	23.36
Band2	20	18900	50	#Max	QPSK	23.50
Band2	20	18900	100	#0	QPSK	23.39
Band2	20	18900	1	#0	16QAM	23.22
Band2	20	18900	1	#Mid	16QAM	23.70
Band2	20	18900	1	#Max	16QAM	23.29
Band2	20	18900	50	#0	16QAM	22.28
Band2	20	18900	50	#Mid	16QAM	22.45
Band2	20	18900	50	#Max	16QAM	22.56
Band2	20	18900	100	#0	16QAM	22.43
Band2	20	19100	1	#0	QPSK	24.02
Band2	20	19100	1	#Mid	QPSK	24.30
Band2	20	19100	1	#Max	QPSK	23.79
Band2	20	19100	50	#0	QPSK	23.51
Band2	20	19100	50	#Mid	QPSK	23.25
Band2	20	19100	50	#Max	QPSK	23.22
Band2	20	19100	100	#0	QPSK	23.42
Band2	20	19100	1	#0	16QAM	23.27
Band2	20	19100	1	#Mid	16QAM	23.58
Band2	20	19100	1	#Max	16QAM	23.06
Band2	20	19100	50	#0	16QAM	22.55
Band2	20	19100	50	#Mid	16QAM	22.28
Band2	20	19100	50	#Max	16QAM	22.34
Band2	20	19100	100	#0	16QAM	22.42

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)
Band4	1.4	19957	1	#0	QPSK	24.15
Band4	1.4	19957	1	#Mid	QPSK	24.35
Band4	1.4	19957	1	#Max	QPSK	24.17
Band4	1.4	19957	3	#0	QPSK	24.13
Band4	1.4	19957	3	#Mid	QPSK	24.15
Band4	1.4	19957	3	#Max	QPSK	24.17
Band4	1.4	19957	6	#0	QPSK	23.21
Band4	1.4	19957	1	#0	16QAM	23.24
Band4	1.4	19957	1	#Mid	16QAM	23.37
Band4	1.4	19957	1	#Max	16QAM	23.23
Band4	1.4	19957	3	#0	16QAM	23.33
Band4	1.4	19957	3	#Mid	16QAM	23.36
Band4	1.4	19957	3	#Max	16QAM	23.34
Band4	1.4	19957	6	#0	16QAM	22.33
Band4	1.4	20175	1	#0	QPSK	24.20
Band4	1.4	20175	1	#Mid	QPSK	24.39
Band4	1.4	20175	1	#Max	QPSK	24.19
Band4	1.4	20175	3	#0	QPSK	24.32
Band4	1.4	20175	3	#Mid	QPSK	24.31
Band4	1.4	20175	3	#Max	QPSK	24.29
Band4	1.4	20175	6	#0	QPSK	23.31
Band4	1.4	20175	1	#0	16QAM	23.44
Band4	1.4	20175	1	#Mid	16QAM	23.54
Band4	1.4	20175	1	#Max	16QAM	23.42
Band4	1.4	20175	3	#0	16QAM	23.52
Band4	1.4	20175	3	#Mid	16QAM	23.52
Band4	1.4	20175	3	#Max	16QAM	23.50
Band4	1.4	20175	6	#0	16QAM	22.44
Band4	1.4	20393	1	#0	QPSK	24.14
Band4	1.4	20393	1	#Mid	QPSK	24.35
Band4	1.4	20393	1	#Max	QPSK	24.19
Band4	1.4	20393	3	#0	QPSK	24.11
Band4	1.4	20393	3	#Mid	QPSK	24.14
Band4	1.4	20393	3	#Max	QPSK	24.13
Band4	1.4	20393	6	#0	QPSK	23.18
Band4	1.4	20393	1	#0	16QAM	22.89
Band4	1.4	20393	1	#Mid	16QAM	23.08
Band4	1.4	20393	1	#Max	16QAM	22.91
Band4	1.4	20393	3	#0	16QAM	23.24
Band4	1.4	20393	3	#Mid	16QAM	23.27
Band4	1.4	20393	3	#Max	16QAM	23.28
Band4	1.4	20393	6	#0	16QAM	22.31
Band4	3	19965	1	#0	QPSK	24.10
Band4	3	19965	1	#Mid	QPSK	24.29
Band4	3	19965	1	#Max	QPSK	24.08
Band4	3	19965	8	#0	QPSK	23.15
Band4	3	19965	8	#Mid	QPSK	23.16
Band4	3	19965	8	#Max	QPSK	23.14
Band4	3	19965	15	#0	QPSK	23.10
Band4	3	19965	1	#0	16QAM	23.53
Band4	3	19965	1	#Mid	16QAM	23.76
Band4	3	19965	1	#Max	16QAM	23.49
Band4	3	19965	8	#0	16QAM	22.11
Band4	3	19965	8	#Mid	16QAM	22.17
Band4	3	19965	8	#Max	16QAM	22.15

Band4	3	19965	15	#0	16QAM	22.14
Band4	3	20175	1	#0	QPSK	24.27
Band4	3	20175	1	#Mid	QPSK	24.51
Band4	3	20175	1	#Max	QPSK	24.25
Band4	3	20175	8	#0	QPSK	23.27
Band4	3	20175	8	#Mid	QPSK	23.29
Band4	3	20175	8	#Max	QPSK	23.29
Band4	3	20175	15	#0	QPSK	23.27
Band4	3	20175	1	#0	16QAM	23.44
Band4	3	20175	1	#Mid	16QAM	23.68
Band4	3	20175	1	#Max	16QAM	23.41
Band4	3	20175	8	#0	16QAM	22.26
Band4	3	20175	8	#Mid	16QAM	22.28
Band4	3	20175	8	#Max	16QAM	22.28
Band4	3	20175	15	#0	16QAM	22.21
Band4	3	20385	1	#0	QPSK	24.18
Band4	3	20385	1	#Mid	QPSK	24.40
Band4	3	20385	1	#Max	QPSK	24.24
Band4	3	20385	8	#0	QPSK	23.15
Band4	3	20385	8	#Mid	QPSK	23.17
Band4	3	20385	8	#Max	QPSK	23.13
Band4	3	20385	15	#0	QPSK	23.10
Band4	3	20385	1	#0	16QAM	22.93
Band4	3	20385	1	#Mid	16QAM	23.16
Band4	3	20385	1	#Max	16QAM	22.96
Band4	3	20385	8	#0	16QAM	22.09
Band4	3	20385	8	#Mid	16QAM	22.10
Band4	3	20385	8	#Max	16QAM	22.09
Band4	3	20385	15	#0	16QAM	22.17
Band4	5	19975	1	#0	QPSK	24.02
Band4	5	19975	1	#Mid	QPSK	24.30
Band4	5	19975	1	#Max	QPSK	24.06
Band4	5	19975	12	#0	QPSK	23.13
Band4	5	19975	12	#Mid	QPSK	23.16
Band4	5	19975	12	#Max	QPSK	23.10
Band4	5	19975	25	#0	QPSK	23.12
Band4	5	19975	1	#0	16QAM	23.51
Band4	5	19975	1	#Mid	16QAM	23.82
Band4	5	19975	1	#Max	16QAM	23.55
Band4	5	19975	12	#0	16QAM	22.11
Band4	5	19975	12	#Mid	16QAM	22.17
Band4	5	19975	12	#Max	16QAM	22.13
Band4	5	19975	25	#0	16QAM	22.11
Band4	5	20175	1	#0	QPSK	24.21
Band4	5	20175	1	#Mid	QPSK	24.62
Band4	5	20175	1	#Max	QPSK	24.26
Band4	5	20175	12	#0	QPSK	23.31
Band4	5	20175	12	#Mid	QPSK	23.33
Band4	5	20175	12	#Max	QPSK	23.30
Band4	5	20175	25	#0	QPSK	23.30
Band4	5	20175	1	#0	16QAM	23.56
Band4	5	20175	1	#Mid	16QAM	23.84
Band4	5	20175	1	#Max	16QAM	23.50
Band4	5	20175	12	#0	16QAM	22.27
Band4	5	20175	12	#Mid	16QAM	22.28
Band4	5	20175	12	#Max	16QAM	22.26
Band4	5	20175	25	#0	16QAM	22.32

Band4	5	20375	1	#0	QPSK	23.95
Band4	5	20375	1	#Mid	QPSK	24.31
Band4	5	20375	1	#Max	QPSK	24.01
Band4	5	20375	12	#0	QPSK	23.07
Band4	5	20375	12	#Mid	QPSK	23.15
Band4	5	20375	12	#Max	QPSK	23.09
Band4	5	20375	25	#0	QPSK	23.11
Band4	5	20375	1	#0	16QAM	23.20
Band4	5	20375	1	#Mid	16QAM	23.54
Band4	5	20375	1	#Max	16QAM	23.31
Band4	5	20375	12	#0	16QAM	22.05
Band4	5	20375	12	#Mid	16QAM	22.15
Band4	5	20375	12	#Max	16QAM	22.09
Band4	5	20375	25	#0	16QAM	22.07
Band4	10	20000	1	#0	QPSK	24.09
Band4	10	20000	1	#Mid	QPSK	24.26
Band4	10	20000	1	#Max	QPSK	24.19
Band4	10	20000	25	#0	QPSK	23.17
Band4	10	20000	25	#Mid	QPSK	23.18
Band4	10	20000	25	#Max	QPSK	23.29
Band4	10	20000	50	#0	QPSK	23.24
Band4	10	20000	1	#0	16QAM	23.26
Band4	10	20000	1	#Mid	16QAM	23.41
Band4	10	20000	1	#Max	16QAM	23.38
Band4	10	20000	25	#0	16QAM	22.20
Band4	10	20000	25	#Mid	16QAM	22.20
Band4	10	20000	25	#Max	16QAM	22.27
Band4	10	20000	50	#0	16QAM	22.24
Band4	10	20175	1	#0	QPSK	24.34
Band4	10	20175	1	#Mid	QPSK	24.48
Band4	10	20175	1	#Max	QPSK	24.34
Band4	10	20175	25	#0	QPSK	23.34
Band4	10	20175	25	#Mid	QPSK	23.30
Band4	10	20175	25	#Max	QPSK	23.37
Band4	10	20175	50	#0	QPSK	23.34
Band4	10	20175	1	#0	16QAM	23.16
Band4	10	20175	1	#Mid	16QAM	23.25
Band4	10	20175	1	#Max	16QAM	23.06
Band4	10	20175	25	#0	16QAM	22.38
Band4	10	20175	25	#Mid	16QAM	22.29
Band4	10	20175	25	#Max	16QAM	22.39
Band4	10	20175	50	#0	16QAM	22.29
Band4	10	20350	1	#0	QPSK	24.11
Band4	10	20350	1	#Mid	QPSK	24.24
Band4	10	20350	1	#Max	QPSK	24.11
Band4	10	20350	25	#0	QPSK	23.17
Band4	10	20350	25	#Mid	QPSK	23.11
Band4	10	20350	25	#Max	QPSK	23.15
Band4	10	20350	50	#0	QPSK	23.13
Band4	10	20350	1	#0	16QAM	23.41
Band4	10	20350	1	#Mid	16QAM	23.54
Band4	10	20350	1	#Max	16QAM	23.45
Band4	10	20350	25	#0	16QAM	22.14
Band4	10	20350	25	#Mid	16QAM	22.11
Band4	10	20350	25	#Max	16QAM	22.18
Band4	10	20350	50	#0	16QAM	22.13
Band4	15	20025	1	#0	QPSK	23.98

Band4	15	20025	1	#Mid	QPSK	24.35
Band4	15	20025	1	#Max	QPSK	24.14
Band4	15	20025	36	#0	QPSK	23.26
Band4	15	20025	36	#Mid	QPSK	23.32
Band4	15	20025	36	#Max	QPSK	23.33
Band4	15	20025	75	#0	QPSK	23.35
Band4	15	20025	1	#0	16QAM	23.21
Band4	15	20025	1	#Mid	16QAM	23.67
Band4	15	20025	1	#Max	16QAM	23.33
Band4	15	20025	36	#0	16QAM	22.25
Band4	15	20025	36	#Mid	16QAM	22.33
Band4	15	20025	36	#Max	16QAM	22.34
Band4	15	20025	75	#0	16QAM	22.26
Band4	15	20175	1	#0	QPSK	24.23
Band4	15	20175	1	#Mid	QPSK	24.70
Band4	15	20175	1	#Max	QPSK	24.20
Band4	15	20175	36	#0	QPSK	23.39
Band4	15	20175	36	#Mid	QPSK	23.44
Band4	15	20175	36	#Max	QPSK	23.46
Band4	15	20175	75	#0	QPSK	23.45
Band4	15	20175	1	#0	16QAM	23.29
Band4	15	20175	1	#Mid	16QAM	23.59
Band4	15	20175	1	#Max	16QAM	23.18
Band4	15	20175	36	#0	16QAM	22.24
Band4	15	20175	36	#Mid	16QAM	22.35
Band4	15	20175	36	#Max	16QAM	22.34
Band4	15	20175	75	#0	16QAM	22.40
Band4	15	20325	1	#0	QPSK	24.05
Band4	15	20325	1	#Mid	QPSK	24.49
Band4	15	20325	1	#Max	QPSK	23.97
Band4	15	20325	36	#0	QPSK	23.29
Band4	15	20325	36	#Mid	QPSK	23.34
Band4	15	20325	36	#Max	QPSK	23.30
Band4	15	20325	75	#0	QPSK	23.32
Band4	15	20325	1	#0	16QAM	23.38
Band4	15	20325	1	#Mid	16QAM	23.66
Band4	15	20325	1	#Max	16QAM	23.36
Band4	15	20325	36	#0	16QAM	22.21
Band4	15	20325	36	#Mid	16QAM	22.24
Band4	15	20325	36	#Max	16QAM	22.19
Band4	15	20325	75	#0	16QAM	22.21
Band4	20	20050	1	#0	QPSK	23.89
Band4	20	20050	1	#Mid	QPSK	24.39
Band4	20	20050	1	#Max	QPSK	24.11
Band4	20	20050	50	#0	QPSK	23.19
Band4	20	20050	50	#Mid	QPSK	23.28
Band4	20	20050	50	#Max	QPSK	23.26
Band4	20	20050	100	#0	QPSK	23.23
Band4	20	20050	1	#0	16QAM	23.07
Band4	20	20050	1	#Mid	16QAM	23.55
Band4	20	20050	1	#Max	16QAM	23.33
Band4	20	20050	50	#0	16QAM	22.14
Band4	20	20050	50	#Mid	16QAM	22.28
Band4	20	20050	50	#Max	16QAM	22.25
Band4	20	20050	100	#0	16QAM	22.25
Band4	20	20175	1	#0	QPSK	23.98
Band4	20	20175	1	#Mid	QPSK	24.48

Band4	20	20175	1	#Max	QPSK	23.91
Band4	20	20175	50	#0	QPSK	23.29
Band4	20	20175	50	#Mid	QPSK	23.35
Band4	20	20175	50	#Max	QPSK	23.34
Band4	20	20175	100	#0	QPSK	23.30
Band4	20	20175	1	#0	16QAM	23.22
Band4	20	20175	1	#Mid	16QAM	23.64
Band4	20	20175	1	#Max	16QAM	23.10
Band4	20	20175	50	#0	16QAM	22.33
Band4	20	20175	50	#Mid	16QAM	22.39
Band4	20	20175	50	#Max	16QAM	22.35
Band4	20	20175	100	#0	16QAM	22.30
Band4	20	20300	1	#0	QPSK	23.95
Band4	20	20300	1	#Mid	QPSK	24.34
Band4	20	20300	1	#Max	QPSK	23.89
Band4	20	20300	50	#0	QPSK	23.07
Band4	20	20300	50	#Mid	QPSK	23.13
Band4	20	20300	50	#Max	QPSK	23.13
Band4	20	20300	100	#0	QPSK	23.11
Band4	20	20300	1	#0	16QAM	23.23
Band4	20	20300	1	#Mid	16QAM	23.50
Band4	20	20300	1	#Max	16QAM	23.14
Band4	20	20300	50	#0	16QAM	22.10
Band4	20	20300	50	#Mid	16QAM	22.15
Band4	20	20300	50	#Max	16QAM	22.18
Band4	20	20300	100	#0	16QAM	22.11

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)
Band5	1.4	20407	1	#0	QPSK	24.33
Band5	1.4	20407	1	#Mid	QPSK	24.50
Band5	1.4	20407	1	#Max	QPSK	24.36
Band5	1.4	20407	3	#0	QPSK	24.12
Band5	1.4	20407	3	#Mid	QPSK	24.00
Band5	1.4	20407	3	#Max	QPSK	23.94
Band5	1.4	20407	6	#0	QPSK	22.94
Band5	1.4	20407	1	#0	16QAM	23.04
Band5	1.4	20407	1	#Mid	16QAM	23.10
Band5	1.4	20407	1	#Max	16QAM	23.03
Band5	1.4	20407	3	#0	16QAM	23.07
Band5	1.4	20407	3	#Mid	16QAM	23.09
Band5	1.4	20407	3	#Max	16QAM	23.10
Band5	1.4	20407	6	#0	16QAM	22.03
Band5	1.4	20525	1	#0	QPSK	23.93
Band5	1.4	20525	1	#Mid	QPSK	24.07
Band5	1.4	20525	1	#Max	QPSK	23.93
Band5	1.4	20525	3	#0	QPSK	23.95
Band5	1.4	20525	3	#Mid	QPSK	23.93
Band5	1.4	20525	3	#Max	QPSK	23.95
Band5	1.4	20525	6	#0	QPSK	22.93
Band5	1.4	20525	1	#0	16QAM	22.74
Band5	1.4	20525	1	#Mid	16QAM	22.85
Band5	1.4	20525	1	#Max	16QAM	22.74
Band5	1.4	20525	3	#0	16QAM	23.04
Band5	1.4	20525	3	#Mid	16QAM	23.05
Band5	1.4	20525	3	#Max	16QAM	23.09
Band5	1.4	20525	6	#0	16QAM	22.11
Band5	1.4	20643	1	#0	QPSK	23.87
Band5	1.4	20643	1	#Mid	QPSK	24.05
Band5	1.4	20643	1	#Max	QPSK	23.96
Band5	1.4	20643	3	#0	QPSK	23.76
Band5	1.4	20643	3	#Mid	QPSK	23.77
Band5	1.4	20643	3	#Max	QPSK	23.72
Band5	1.4	20643	6	#0	QPSK	22.90
Band5	1.4	20643	1	#0	16QAM	22.87
Band5	1.4	20643	1	#Mid	16QAM	22.91
Band5	1.4	20643	1	#Max	16QAM	22.73
Band5	1.4	20643	3	#0	16QAM	22.92
Band5	1.4	20643	3	#Mid	16QAM	22.88
Band5	1.4	20643	3	#Max	16QAM	22.81
Band5	1.4	20643	6	#0	16QAM	21.94
Band5	3	20415	1	#0	QPSK	23.89
Band5	3	20415	1	#Mid	QPSK	24.12
Band5	3	20415	1	#Max	QPSK	23.91
Band5	3	20415	8	#0	QPSK	22.91
Band5	3	20415	8	#Mid	QPSK	22.94
Band5	3	20415	8	#Max	QPSK	22.96
Band5	3	20415	15	#0	QPSK	22.86
Band5	3	20415	1	#0	16QAM	23.23
Band5	3	20415	1	#Mid	16QAM	23.55
Band5	3	20415	1	#Max	16QAM	23.25
Band5	3	20415	8	#0	16QAM	21.88
Band5	3	20415	8	#Mid	16QAM	21.90
Band5	3	20415	8	#Max	16QAM	21.96

Band5	3	20415	15	#0	16QAM	21.90
Band5	3	20525	1	#0	QPSK	23.94
Band5	3	20525	1	#Mid	QPSK	24.16
Band5	3	20525	1	#Max	QPSK	23.89
Band5	3	20525	8	#0	QPSK	22.92
Band5	3	20525	8	#Mid	QPSK	22.95
Band5	3	20525	8	#Max	QPSK	22.91
Band5	3	20525	15	#0	QPSK	22.90
Band5	3	20525	1	#0	16QAM	23.11
Band5	3	20525	1	#Mid	16QAM	23.36
Band5	3	20525	1	#Max	16QAM	23.06
Band5	3	20525	8	#0	16QAM	21.97
Band5	3	20525	8	#Mid	16QAM	21.91
Band5	3	20525	8	#Max	16QAM	21.91
Band5	3	20525	15	#0	16QAM	21.87
Band5	3	20635	1	#0	QPSK	23.87
Band5	3	20635	1	#Mid	QPSK	24.18
Band5	3	20635	1	#Max	QPSK	24.06
Band5	3	20635	8	#0	QPSK	22.91
Band5	3	20635	8	#Mid	QPSK	22.90
Band5	3	20635	8	#Max	QPSK	22.77
Band5	3	20635	15	#0	QPSK	22.81
Band5	3	20635	1	#0	16QAM	22.73
Band5	3	20635	1	#Mid	16QAM	23.00
Band5	3	20635	1	#Max	16QAM	22.55
Band5	3	20635	8	#0	16QAM	21.92
Band5	3	20635	8	#Mid	16QAM	21.91
Band5	3	20635	8	#Max	16QAM	21.77
Band5	3	20635	15	#0	16QAM	21.89
Band5	5	20425	1	#0	QPSK	23.79
Band5	5	20425	1	#Mid	QPSK	24.22
Band5	5	20425	1	#Max	QPSK	23.82
Band5	5	20425	12	#0	QPSK	22.80
Band5	5	20425	12	#Mid	QPSK	22.98
Band5	5	20425	12	#Max	QPSK	22.98
Band5	5	20425	25	#0	QPSK	22.91
Band5	5	20425	1	#0	16QAM	23.19
Band5	5	20425	1	#Mid	16QAM	23.53
Band5	5	20425	1	#Max	16QAM	23.27
Band5	5	20425	12	#0	16QAM	21.79
Band5	5	20425	12	#Mid	16QAM	21.94
Band5	5	20425	12	#Max	16QAM	21.95
Band5	5	20425	25	#0	16QAM	21.88
Band5	5	20525	1	#0	QPSK	23.87
Band5	5	20525	1	#Mid	QPSK	24.18
Band5	5	20525	1	#Max	QPSK	23.82
Band5	5	20525	12	#0	QPSK	22.92
Band5	5	20525	12	#Mid	QPSK	22.96
Band5	5	20525	12	#Max	QPSK	22.90
Band5	5	20525	25	#0	QPSK	22.89
Band5	5	20525	1	#0	16QAM	23.15
Band5	5	20525	1	#Mid	16QAM	23.42
Band5	5	20525	1	#Max	16QAM	23.11
Band5	5	20525	12	#0	16QAM	21.85
Band5	5	20525	12	#Mid	16QAM	21.92
Band5	5	20525	12	#Max	16QAM	21.84
Band5	5	20525	25	#0	16QAM	21.94

Band5	5	20625	1	#0	QPSK	23.66
Band5	5	20625	1	#Mid	QPSK	24.10
Band5	5	20625	1	#Max	QPSK	23.75
Band5	5	20625	12	#0	QPSK	22.87
Band5	5	20625	12	#Mid	QPSK	22.93
Band5	5	20625	12	#Max	QPSK	22.57
Band5	5	20625	25	#0	QPSK	22.75
Band5	5	20625	1	#0	16QAM	23.02
Band5	5	20625	1	#Mid	16QAM	23.41
Band5	5	20625	1	#Max	16QAM	22.88
Band5	5	20625	12	#0	16QAM	21.88
Band5	5	20625	12	#Mid	16QAM	21.96
Band5	5	20625	12	#Max	16QAM	21.59
Band5	5	20625	25	#0	16QAM	21.79
Band5	10	20450	1	#0	QPSK	23.87
Band5	10	20450	1	#Mid	QPSK	24.04
Band5	10	20450	1	#Max	QPSK	23.95
Band5	10	20450	25	#0	QPSK	22.83
Band5	10	20450	25	#Mid	QPSK	22.91
Band5	10	20450	25	#Max	QPSK	23.01
Band5	10	20450	50	#0	QPSK	22.92
Band5	10	20450	1	#0	16QAM	22.97
Band5	10	20450	1	#Mid	16QAM	23.13
Band5	10	20450	1	#Max	16QAM	23.07
Band5	10	20450	25	#0	16QAM	21.84
Band5	10	20450	25	#Mid	16QAM	21.92
Band5	10	20450	25	#Max	16QAM	22.03
Band5	10	20450	50	#0	16QAM	21.95
Band5	10	20525	1	#0	QPSK	23.99
Band5	10	20525	1	#Mid	QPSK	24.15
Band5	10	20525	1	#Max	QPSK	23.99
Band5	10	20525	25	#0	QPSK	22.98
Band5	10	20525	25	#Mid	QPSK	22.97
Band5	10	20525	25	#Max	QPSK	22.97
Band5	10	20525	50	#0	QPSK	22.96
Band5	10	20525	1	#0	16QAM	22.76
Band5	10	20525	1	#Mid	16QAM	22.93
Band5	10	20525	1	#Max	16QAM	22.73
Band5	10	20525	25	#0	16QAM	21.98
Band5	10	20525	25	#Mid	16QAM	21.97
Band5	10	20525	25	#Max	16QAM	21.97
Band5	10	20525	50	#0	16QAM	21.97
Band5	10	20600	1	#0	QPSK	23.84
Band5	10	20600	1	#Mid	QPSK	23.91
Band5	10	20600	1	#Max	QPSK	23.90
Band5	10	20600	25	#0	QPSK	22.83
Band5	10	20600	25	#Mid	QPSK	22.88
Band5	10	20600	25	#Max	QPSK	22.63
Band5	10	20600	50	#0	QPSK	22.74
Band5	10	20600	1	#0	16QAM	23.19
Band5	10	20600	1	#Mid	16QAM	23.34
Band5	10	20600	1	#Max	16QAM	23.06
Band5	10	20600	25	#0	16QAM	21.87
Band5	10	20600	25	#Mid	16QAM	21.91
Band5	10	20600	25	#Max	16QAM	21.63
Band5	10	20600	50	#0	16QAM	21.75

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)
Band7	5	20775	1	#0	QPSK	24.61
Band7	5	20775	1	#Mid	QPSK	25.04
Band7	5	20775	1	#Max	QPSK	24.59
Band7	5	20775	12	#0	QPSK	23.70
Band7	5	20775	12	#Mid	QPSK	23.81
Band7	5	20775	12	#Max	QPSK	23.75
Band7	5	20775	25	#0	QPSK	23.77
Band7	5	20775	1	#0	16QAM	23.81
Band7	5	20775	1	#Mid	16QAM	24.17
Band7	5	20775	1	#Max	16QAM	23.84
Band7	5	20775	12	#0	16QAM	22.71
Band7	5	20775	12	#Mid	16QAM	22.79
Band7	5	20775	12	#Max	16QAM	22.76
Band7	5	20775	25	#0	16QAM	22.70
Band7	5	21100	1	#0	QPSK	24.49
Band7	5	21100	1	#Mid	QPSK	24.98
Band7	5	21100	1	#Max	QPSK	24.53
Band7	5	21100	12	#0	QPSK	23.62
Band7	5	21100	12	#Mid	QPSK	23.68
Band7	5	21100	12	#Max	QPSK	23.71
Band7	5	21100	25	#0	QPSK	23.65
Band7	5	21100	1	#0	16QAM	23.90
Band7	5	21100	1	#Mid	16QAM	24.26
Band7	5	21100	1	#Max	16QAM	23.98
Band7	5	21100	12	#0	16QAM	22.54
Band7	5	21100	12	#Mid	16QAM	22.67
Band7	5	21100	12	#Max	16QAM	22.62
Band7	5	21100	25	#0	16QAM	22.57
Band7	5	21425	1	#0	QPSK	24.17
Band7	5	21425	1	#Mid	QPSK	24.81
Band7	5	21425	1	#Max	QPSK	24.30
Band7	5	21425	12	#0	QPSK	23.22
Band7	5	21425	12	#Mid	QPSK	23.32
Band7	5	21425	12	#Max	QPSK	23.38
Band7	5	21425	25	#0	QPSK	23.31
Band7	5	21425	1	#0	16QAM	23.40
Band7	5	21425	1	#Mid	16QAM	23.74
Band7	5	21425	1	#Max	16QAM	23.40
Band7	5	21425	12	#0	16QAM	22.14
Band7	5	21425	12	#Mid	16QAM	22.27
Band7	5	21425	12	#Max	16QAM	22.27
Band7	5	21425	25	#0	16QAM	22.33
Band7	10	20800	1	#0	QPSK	24.67
Band7	10	20800	1	#Mid	QPSK	24.88
Band7	10	20800	1	#Max	QPSK	24.66
Band7	10	20800	25	#0	QPSK	23.74
Band7	10	20800	25	#Mid	QPSK	23.74
Band7	10	20800	25	#Max	QPSK	23.78
Band7	10	20800	50	#0	QPSK	23.74
Band7	10	20800	1	#0	16QAM	23.80
Band7	10	20800	1	#Mid	16QAM	23.90
Band7	10	20800	1	#Max	16QAM	23.71
Band7	10	20800	25	#0	16QAM	22.72
Band7	10	20800	25	#Mid	16QAM	22.76
Band7	10	20800	25	#Max	16QAM	22.74

Band7	10	20800	50	#0	16QAM	22.73
Band7	10	21100	1	#0	QPSK	24.63
Band7	10	21100	1	#Mid	QPSK	24.82
Band7	10	21100	1	#Max	QPSK	24.64
Band7	10	21100	25	#0	QPSK	23.60
Band7	10	21100	25	#Mid	QPSK	23.64
Band7	10	21100	25	#Max	QPSK	23.75
Band7	10	21100	50	#0	QPSK	23.63
Band7	10	21100	1	#0	16QAM	23.37
Band7	10	21100	1	#Mid	16QAM	23.54
Band7	10	21100	1	#Max	16QAM	23.43
Band7	10	21100	25	#0	16QAM	22.64
Band7	10	21100	25	#Mid	16QAM	22.65
Band7	10	21100	25	#Max	16QAM	22.70
Band7	10	21100	50	#0	16QAM	22.61
Band7	10	21400	1	#0	QPSK	24.18
Band7	10	21400	1	#Mid	QPSK	24.36
Band7	10	21400	1	#Max	QPSK	24.28
Band7	10	21400	25	#0	QPSK	23.26
Band7	10	21400	25	#Mid	QPSK	23.30
Band7	10	21400	25	#Max	QPSK	23.48
Band7	10	21400	50	#0	QPSK	23.35
Band7	10	21400	1	#0	16QAM	23.43
Band7	10	21400	1	#Mid	16QAM	23.63
Band7	10	21400	1	#Max	16QAM	23.52
Band7	10	21400	25	#0	16QAM	22.25
Band7	10	21400	25	#Mid	16QAM	22.30
Band7	10	21400	25	#Max	16QAM	22.46
Band7	10	21400	50	#0	16QAM	22.33
Band7	15	20825	1	#0	QPSK	24.75
Band7	15	20825	1	#Mid	QPSK	25.08
Band7	15	20825	1	#Max	QPSK	24.63
Band7	15	20825	36	#0	QPSK	23.80
Band7	15	20825	36	#Mid	QPSK	23.88
Band7	15	20825	36	#Max	QPSK	23.80
Band7	15	20825	75	#0	QPSK	23.84
Band7	15	20825	1	#0	16QAM	23.68
Band7	15	20825	1	#Mid	16QAM	23.97
Band7	15	20825	1	#Max	16QAM	23.53
Band7	15	20825	36	#0	16QAM	22.66
Band7	15	20825	36	#Mid	16QAM	22.74
Band7	15	20825	36	#Max	16QAM	22.65
Band7	15	20825	75	#0	16QAM	22.78
Band7	15	21100	1	#0	QPSK	24.41
Band7	15	21100	1	#Mid	QPSK	24.84
Band7	15	21100	1	#Max	QPSK	24.42
Band7	15	21100	36	#0	QPSK	23.67
Band7	15	21100	36	#Mid	QPSK	23.72
Band7	15	21100	36	#Max	QPSK	23.76
Band7	15	21100	75	#0	QPSK	23.74
Band7	15	21100	1	#0	16QAM	23.71
Band7	15	21100	1	#Mid	16QAM	24.18
Band7	15	21100	1	#Max	16QAM	23.79
Band7	15	21100	36	#0	16QAM	22.60
Band7	15	21100	36	#Mid	16QAM	22.70
Band7	15	21100	36	#Max	16QAM	22.72
Band7	15	21100	75	#0	16QAM	22.67

Band7	15	21375	1	#0	QPSK	24.18
Band7	15	21375	1	#Mid	QPSK	24.56
Band7	15	21375	1	#Max	QPSK	24.12
Band7	15	21375	36	#0	QPSK	23.41
Band7	15	21375	36	#Mid	QPSK	23.40
Band7	15	21375	36	#Max	QPSK	23.48
Band7	15	21375	75	#0	QPSK	23.45
Band7	15	21375	1	#0	16QAM	23.29
Band7	15	21375	1	#Mid	16QAM	23.61
Band7	15	21375	1	#Max	16QAM	23.23
Band7	15	21375	36	#0	16QAM	22.37
Band7	15	21375	36	#Mid	16QAM	22.36
Band7	15	21375	36	#Max	16QAM	22.45
Band7	15	21375	75	#0	16QAM	22.34
Band7	20	20850	1	#0	QPSK	24.57
Band7	20	20850	1	#Mid	QPSK	24.90
Band7	20	20850	1	#Max	QPSK	24.42
Band7	20	20850	50	#0	QPSK	23.65
Band7	20	20850	50	#Mid	QPSK	23.69
Band7	20	20850	50	#Max	QPSK	23.47
Band7	20	20850	100	#0	QPSK	23.57
Band7	20	20850	1	#0	16QAM	23.64
Band7	20	20850	1	#Mid	16QAM	23.88
Band7	20	20850	1	#Max	16QAM	23.46
Band7	20	20850	50	#0	16QAM	22.58
Band7	20	20850	50	#Mid	16QAM	22.65
Band7	20	20850	50	#Max	16QAM	22.47
Band7	20	20850	100	#0	16QAM	22.55
Band7	20	21100	1	#0	QPSK	24.25
Band7	20	21100	1	#Mid	QPSK	24.73
Band7	20	21100	1	#Max	QPSK	24.30
Band7	20	21100	50	#0	QPSK	23.53
Band7	20	21100	50	#Mid	QPSK	23.67
Band7	20	21100	50	#Max	QPSK	23.74
Band7	20	21100	100	#0	QPSK	23.61
Band7	20	21100	1	#0	16QAM	23.51
Band7	20	21100	1	#Mid	16QAM	23.90
Band7	20	21100	1	#Max	16QAM	23.55
Band7	20	21100	50	#0	16QAM	22.59
Band7	20	21100	50	#Mid	16QAM	22.69
Band7	20	21100	50	#Max	16QAM	22.76
Band7	20	21100	100	#0	16QAM	22.61
Band7	20	21350	1	#0	QPSK	24.09
Band7	20	21350	1	#Mid	QPSK	24.41
Band7	20	21350	1	#Max	QPSK	24.06
Band7	20	21350	50	#0	QPSK	23.44
Band7	20	21350	50	#Mid	QPSK	23.29
Band7	20	21350	50	#Max	QPSK	23.34
Band7	20	21350	100	#0	QPSK	23.37
Band7	20	21350	1	#0	16QAM	23.37
Band7	20	21350	1	#Mid	16QAM	23.54
Band7	20	21350	1	#Max	16QAM	23.25
Band7	20	21350	50	#0	16QAM	22.47
Band7	20	21350	50	#Mid	16QAM	22.33
Band7	20	21350	50	#Max	16QAM	22.35
Band7	20	21350	100	#0	16QAM	22.39

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)
Band12	1.4	23017	1	#0	QPSK	23.43
Band12	1.4	23017	1	#Mid	QPSK	23.67
Band12	1.4	23017	1	#Max	QPSK	23.63
Band12	1.4	23017	3	#0	QPSK	23.61
Band12	1.4	23017	3	#Mid	QPSK	23.62
Band12	1.4	23017	3	#Max	QPSK	23.71
Band12	1.4	23017	6	#0	QPSK	22.55
Band12	1.4	23017	1	#0	16QAM	22.70
Band12	1.4	23017	1	#Mid	16QAM	22.84
Band12	1.4	23017	1	#Max	16QAM	22.87
Band12	1.4	23017	3	#0	16QAM	22.81
Band12	1.4	23017	3	#Mid	16QAM	22.86
Band12	1.4	23017	3	#Max	16QAM	22.93
Band12	1.4	23017	6	#0	16QAM	21.80
Band12	1.4	23095	1	#0	QPSK	23.70
Band12	1.4	23095	1	#Mid	QPSK	23.86
Band12	1.4	23095	1	#Max	QPSK	23.69
Band12	1.4	23095	3	#0	QPSK	23.75
Band12	1.4	23095	3	#Mid	QPSK	23.75
Band12	1.4	23095	3	#Max	QPSK	23.76
Band12	1.4	23095	6	#0	QPSK	22.71
Band12	1.4	23095	1	#0	16QAM	22.52
Band12	1.4	23095	1	#Mid	16QAM	22.63
Band12	1.4	23095	1	#Max	16QAM	22.53
Band12	1.4	23095	3	#0	16QAM	22.85
Band12	1.4	23095	3	#Mid	16QAM	22.84
Band12	1.4	23095	3	#Max	16QAM	22.88
Band12	1.4	23095	6	#0	16QAM	21.93
Band12	1.4	23173	1	#0	QPSK	23.67
Band12	1.4	23173	1	#Mid	QPSK	23.82
Band12	1.4	23173	1	#Max	QPSK	23.67
Band12	1.4	23173	3	#0	QPSK	23.66
Band12	1.4	23173	3	#Mid	QPSK	23.68
Band12	1.4	23173	3	#Max	QPSK	23.72
Band12	1.4	23173	6	#0	QPSK	22.66
Band12	1.4	23173	1	#0	16QAM	22.75
Band12	1.4	23173	1	#Mid	16QAM	22.89
Band12	1.4	23173	1	#Max	16QAM	22.75
Band12	1.4	23173	3	#0	16QAM	22.85
Band12	1.4	23173	3	#Mid	16QAM	22.82
Band12	1.4	23173	3	#Max	16QAM	22.82
Band12	1.4	23173	6	#0	16QAM	21.90
Band12	3	23025	1	#0	QPSK	23.44
Band12	3	23025	1	#Mid	QPSK	23.97
Band12	3	23025	1	#Max	QPSK	23.68
Band12	3	23025	8	#0	QPSK	22.57
Band12	3	23025	8	#Mid	QPSK	22.70
Band12	3	23025	8	#Max	QPSK	22.66
Band12	3	23025	15	#0	QPSK	22.59
Band12	3	23025	1	#0	16QAM	22.71
Band12	3	23025	1	#Mid	16QAM	22.97
Band12	3	23025	1	#Max	16QAM	22.86
Band12	3	23025	8	#0	16QAM	21.68
Band12	3	23025	8	#Mid	16QAM	21.76
Band12	3	23025	8	#Max	16QAM	21.74

Band12	3	23025	15	#0	16QAM	21.66
Band12	3	23095	1	#0	QPSK	23.73
Band12	3	23095	1	#Mid	QPSK	24.08
Band12	3	23095	1	#Max	QPSK	23.75
Band12	3	23095	8	#0	QPSK	22.65
Band12	3	23095	8	#Mid	QPSK	22.69
Band12	3	23095	8	#Max	QPSK	22.69
Band12	3	23095	15	#0	QPSK	22.68
Band12	3	23095	1	#0	16QAM	22.55
Band12	3	23095	1	#Mid	16QAM	22.90
Band12	3	23095	1	#Max	16QAM	22.55
Band12	3	23095	8	#0	16QAM	21.69
Band12	3	23095	8	#Mid	16QAM	21.74
Band12	3	23095	8	#Max	16QAM	21.76
Band12	3	23095	15	#0	16QAM	21.83
Band12	3	23165	1	#0	QPSK	23.61
Band12	3	23165	1	#Mid	QPSK	23.89
Band12	3	23165	1	#Max	QPSK	23.62
Band12	3	23165	8	#0	QPSK	22.63
Band12	3	23165	8	#Mid	QPSK	22.67
Band12	3	23165	8	#Max	QPSK	22.65
Band12	3	23165	15	#0	QPSK	22.59
Band12	3	23165	1	#0	16QAM	23.08
Band12	3	23165	1	#Mid	16QAM	23.40
Band12	3	23165	1	#Max	16QAM	23.00
Band12	3	23165	8	#0	16QAM	21.74
Band12	3	23165	8	#Mid	16QAM	21.74
Band12	3	23165	8	#Max	16QAM	21.71
Band12	3	23165	15	#0	16QAM	21.72
Band12	5	23035	1	#0	QPSK	23.95
Band12	5	23035	1	#Mid	QPSK	24.54
Band12	5	23035	1	#Max	QPSK	24.20
Band12	5	23035	12	#0	QPSK	23.25
Band12	5	23035	12	#Mid	QPSK	23.32
Band12	5	23035	12	#Max	QPSK	23.21
Band12	5	23035	25	#0	QPSK	23.21
Band12	5	23035	1	#0	16QAM	23.24
Band12	5	23035	1	#Mid	16QAM	23.78
Band12	5	23035	1	#Max	16QAM	23.24
Band12	5	23035	12	#0	16QAM	21.74
Band12	5	23035	12	#Mid	16QAM	21.84
Band12	5	23035	12	#Max	16QAM	21.75
Band12	5	23035	25	#0	16QAM	21.73
Band12	5	23095	1	#0	QPSK	23.65
Band12	5	23095	1	#Mid	QPSK	24.00
Band12	5	23095	1	#Max	QPSK	23.66
Band12	5	23095	12	#0	QPSK	22.74
Band12	5	23095	12	#Mid	QPSK	22.77
Band12	5	23095	12	#Max	QPSK	22.79
Band12	5	23095	25	#0	QPSK	22.78
Band12	5	23095	1	#0	16QAM	22.96
Band12	5	23095	1	#Mid	16QAM	23.40
Band12	5	23095	1	#Max	16QAM	22.96
Band12	5	23095	12	#0	16QAM	21.75
Band12	5	23095	12	#Mid	16QAM	21.76
Band12	5	23095	12	#Max	16QAM	21.76
Band12	5	23095	25	#0	16QAM	21.86

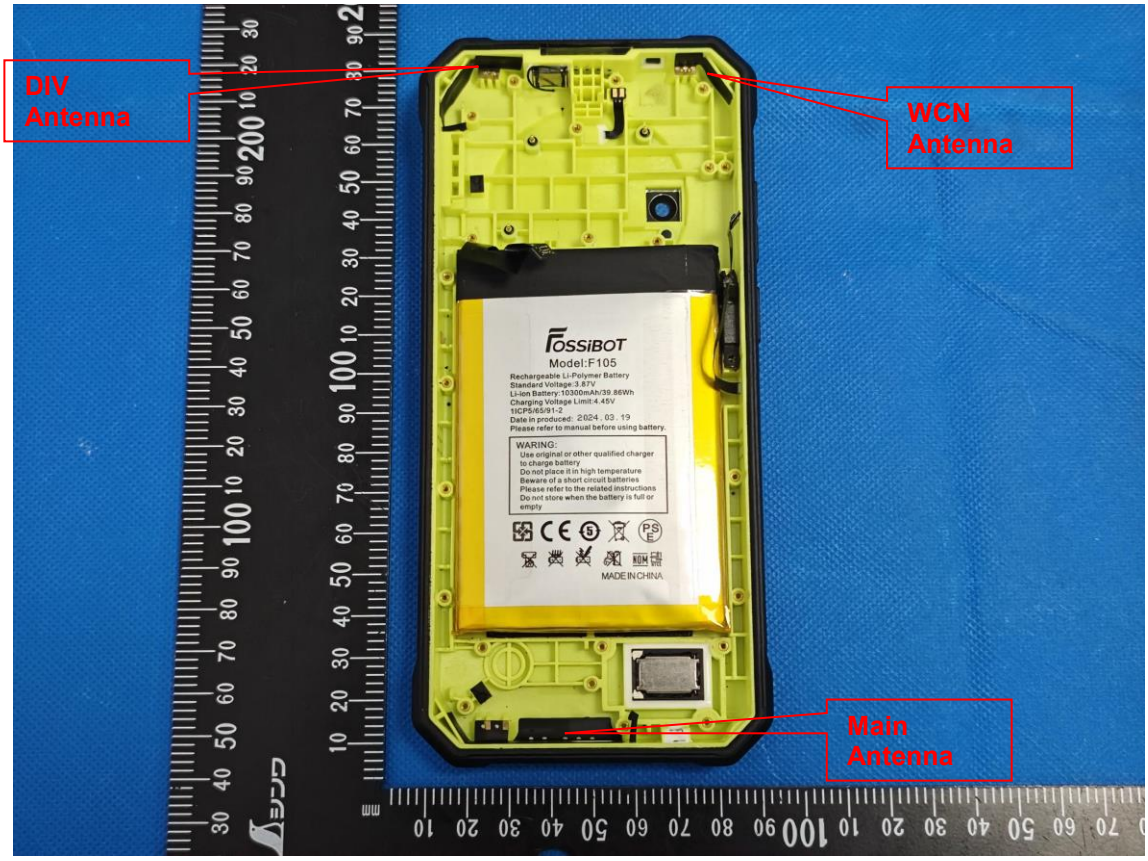
Band12	5	23155	1	#0	QPSK	23.55
Band12	5	23155	1	#Mid	QPSK	23.94
Band12	5	23155	1	#Max	QPSK	23.56
Band12	5	23155	12	#0	QPSK	22.58
Band12	5	23155	12	#Mid	QPSK	22.76
Band12	5	23155	12	#Max	QPSK	22.59
Band12	5	23155	25	#0	QPSK	22.65
Band12	5	23155	1	#0	16QAM	22.93
Band12	5	23155	1	#Mid	16QAM	23.27
Band12	5	23155	1	#Max	16QAM	22.94
Band12	5	23155	12	#0	16QAM	21.71
Band12	5	23155	12	#Mid	16QAM	21.87
Band12	5	23155	12	#Max	16QAM	21.67
Band12	5	23155	25	#0	16QAM	21.67
Band12	10	23060	1	#0	QPSK	23.55
Band12	10	23060	1	#Mid	QPSK	23.92
Band12	10	23060	1	#Max	QPSK	23.79
Band12	10	23060	25	#0	QPSK	22.81
Band12	10	23060	25	#Mid	QPSK	22.78
Band12	10	23060	25	#Max	QPSK	22.74
Band12	10	23060	50	#0	QPSK	22.77
Band12	10	23060	1	#0	16QAM	22.45
Band12	10	23060	1	#Mid	16QAM	22.67
Band12	10	23060	1	#Max	16QAM	22.58
Band12	10	23060	25	#0	16QAM	21.87
Band12	10	23060	25	#Mid	16QAM	21.84
Band12	10	23060	25	#Max	16QAM	21.82
Band12	10	23060	50	#0	16QAM	21.81
Band12	10	23095	1	#0	QPSK	23.60
Band12	10	23095	1	#Mid	QPSK	23.83
Band12	10	23095	1	#Max	QPSK	23.63
Band12	10	23095	25	#0	QPSK	22.81
Band12	10	23095	25	#Mid	QPSK	22.71
Band12	10	23095	25	#Max	QPSK	22.90
Band12	10	23095	50	#0	QPSK	22.82
Band12	10	23095	1	#0	16QAM	23.02
Band12	10	23095	1	#Mid	16QAM	23.23
Band12	10	23095	1	#Max	16QAM	23.11
Band12	10	23095	25	#0	16QAM	21.89
Band12	10	23095	25	#Mid	16QAM	21.84
Band12	10	23095	25	#Max	16QAM	22.01
Band12	10	23095	50	#0	16QAM	21.89
Band12	10	23130	1	#0	QPSK	23.65
Band12	10	23130	1	#Mid	QPSK	23.82
Band12	10	23130	1	#Max	QPSK	23.67
Band12	10	23130	25	#0	QPSK	22.60
Band12	10	23130	25	#Mid	QPSK	22.72
Band12	10	23130	25	#Max	QPSK	22.75
Band12	10	23130	50	#0	QPSK	22.72
Band12	10	23130	1	#0	16QAM	22.78
Band12	10	23130	1	#Mid	16QAM	22.99
Band12	10	23130	1	#Max	16QAM	22.80
Band12	10	23130	25	#0	16QAM	21.67
Band12	10	23130	25	#Mid	16QAM	21.82
Band12	10	23130	25	#Max	16QAM	21.84
Band12	10	23130	50	#0	16QAM	21.81

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)
Band17	5	23755	1	#0	QPSK	23.66
Band17	5	23755	1	#Mid	QPSK	24.05
Band17	5	23755	1	#Max	QPSK	23.70
Band17	5	23755	12	#0	QPSK	22.84
Band17	5	23755	12	#Mid	QPSK	22.88
Band17	5	23755	12	#Max	QPSK	22.85
Band17	5	23755	25	#0	QPSK	22.88
Band17	5	23755	1	#0	16QAM	22.99
Band17	5	23755	1	#Mid	16QAM	23.38
Band17	5	23755	1	#Max	16QAM	23.04
Band17	5	23755	12	#0	16QAM	21.94
Band17	5	23755	12	#Mid	16QAM	21.95
Band17	5	23755	12	#Max	16QAM	21.91
Band17	5	23755	25	#0	16QAM	21.93
Band17	5	23790	1	#0	QPSK	23.67
Band17	5	23790	1	#Mid	QPSK	24.08
Band17	5	23790	1	#Max	QPSK	23.63
Band17	5	23790	12	#0	QPSK	22.73
Band17	5	23790	12	#Mid	QPSK	22.82
Band17	5	23790	12	#Max	QPSK	22.83
Band17	5	23790	25	#0	QPSK	22.79
Band17	5	23790	1	#0	16QAM	23.19
Band17	5	23790	1	#Mid	16QAM	23.64
Band17	5	23790	1	#Max	16QAM	23.23
Band17	5	23790	12	#0	16QAM	21.80
Band17	5	23790	12	#Mid	16QAM	21.86
Band17	5	23790	12	#Max	16QAM	21.89
Band17	5	23790	25	#0	16QAM	21.85
Band17	5	23825	1	#0	QPSK	23.67
Band17	5	23825	1	#Mid	QPSK	24.09
Band17	5	23825	1	#Max	QPSK	23.69
Band17	5	23825	12	#0	QPSK	22.66
Band17	5	23825	12	#Mid	QPSK	22.82
Band17	5	23825	12	#Max	QPSK	22.60
Band17	5	23825	25	#0	QPSK	22.69
Band17	5	23825	1	#0	16QAM	23.01
Band17	5	23825	1	#Mid	16QAM	23.38
Band17	5	23825	1	#Max	16QAM	22.98
Band17	5	23825	12	#0	16QAM	21.66
Band17	5	23825	12	#Mid	16QAM	21.79
Band17	5	23825	12	#Max	16QAM	21.64
Band17	5	23825	25	#0	16QAM	21.77
Band17	10	23780	1	#0	QPSK	23.72
Band17	10	23780	1	#Mid	QPSK	23.89
Band17	10	23780	1	#Max	QPSK	23.69
Band17	10	23780	25	#0	QPSK	22.82
Band17	10	23780	25	#Mid	QPSK	22.81
Band17	10	23780	25	#Max	QPSK	23.02
Band17	10	23780	50	#0	QPSK	22.95
Band17	10	23780	1	#0	16QAM	23.10
Band17	10	23780	1	#Mid	16QAM	23.29
Band17	10	23780	1	#Max	16QAM	23.13
Band17	10	23780	25	#0	16QAM	21.91
Band17	10	23780	25	#Mid	16QAM	21.93
Band17	10	23780	25	#Max	16QAM	22.08

Band17	10	23780	50	#0	16QAM	22.02
Band17	10	23790	1	#0	QPSK	23.76
Band17	10	23790	1	#Mid	QPSK	23.89
Band17	10	23790	1	#Max	QPSK	23.71
Band17	10	23790	25	#0	QPSK	22.79
Band17	10	23790	25	#Mid	QPSK	22.80
Band17	10	23790	25	#Max	QPSK	22.93
Band17	10	23790	50	#0	QPSK	22.86
Band17	10	23790	1	#0	16QAM	22.93
Band17	10	23790	1	#Mid	16QAM	23.06
Band17	10	23790	1	#Max	16QAM	22.90
Band17	10	23790	25	#0	16QAM	21.81
Band17	10	23790	25	#Mid	16QAM	21.87
Band17	10	23790	25	#Max	16QAM	21.99
Band17	10	23790	50	#0	16QAM	21.95
Band17	10	23800	1	#0	QPSK	23.86
Band17	10	23800	1	#Mid	QPSK	23.96
Band17	10	23800	1	#Max	QPSK	23.83
Band17	10	23800	25	#0	QPSK	22.71
Band17	10	23800	25	#Mid	QPSK	22.80
Band17	10	23800	25	#Max	QPSK	22.83
Band17	10	23800	50	#0	QPSK	22.77
Band17	10	23800	1	#0	16QAM	22.67
Band17	10	23800	1	#Mid	16QAM	22.77
Band17	10	23800	1	#Max	16QAM	22.59
Band17	10	23800	25	#0	16QAM	21.78
Band17	10	23800	25	#Mid	16QAM	21.86
Band17	10	23800	25	#Max	16QAM	21.90
Band17	10	23800	50	#0	16QAM	21.84

14.2 Transmit Antennas and SAR Measurement Position

EUT Antenna Location:



Antennas	Support Band
Main	GSM 850/1900 + WCDMA Band 2/4/5 + LTE Band 2/4/5/7/12/17 TX
DIV	GSM 850/1900 + WCDMA Band 2/4/5 + LTE Band 2/4/5/7/12/17 RX
WCN	GPS + Bluetooth + WIFI

Distance of The Antenna to the EUT surface and edge (mm)						
Antennas	Front	Back	Top Side	Bottom Side	Left Side	Right Side
Main	<25	<25	175	<25	<25	<25
WCN	<25	<25	<25	175	80	<25

Positions for SAR tests; Hotspot mode						
Antennas	Front	Back	Top Side	Bottom Side	Left Side	Right Side
Main	Yes	Yes	No	Yes	Yes	Yes
WCN	Yes	Yes	Yes	No	No	Yes

Note:

1. According to the KDB 941225 D06 Hot Spot SAR v02, the edges with less than 25 mm distance to the antennas need to be tested for SAR.
2. According to the KDB 941225 D06 Hot Spot SAR v02, When the overall length and width of a device is > 9 cm x 5 cm (~3.5" x 2"), a test separation distance of 10 mm is required for hotspot mode SAR measurements.

14.3 Measured and Reported (Scaled) SAR Results

The calculated SAR is obtained by the following formula:
1. Reported SAR for WWAN=Measured SAR * Tune-up Scaling factor
2. Reported SAR for WLAN and Bluetooth=Measured SAR * Tune-up Scaling factor * Duty Cycle Scaling factor
3. Duty Cycle Scaling factor=1/ Duty Cycle (%)

KDB 447498 D01 General RF Exposure Guidance:
Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 648474 D04 Handset SAR v01r03:
1. When the *reported* SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest *reported* SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.
2. when the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, using the same wireless mode test configuration for voice and data, such as UMTS, LTE and Wi-Fi, and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface)
3. For Smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

KDB 941225 D01 3G SAR Procedures:
When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤1/4dB higher than the primary mode (RMC12.2kbps) or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices:
1. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
2. When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
3. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
4. SAR measurement is not required for the 16QAM and 64QAM. When the highest maximum output power for 16QAM and 64QAM is ≤ ½ dB higher than the QPSK or when the reported SAR for the QPSK configuration is ≤ 1.45 W/kg.
5. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

WIFI 2.4G										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	b	Left Cheek	6	2437	12.04	12.5	1.112	0.217	0.241	
		Left Tilt	6	2437	12.04	12.5	1.112	0.108	0.120	
		Right Cheek	6	2437	12.04	12.5	1.112	0.159	0.177	
		Right Tilt	6	2437	12.04	12.5	1.112	0.205	0.228	
Body (10mm)	b	Front Face	6	2437	12.04	12.5	1.112	0.175	0.195	
		Back Face	6	2437	12.04	12.5	1.112	0.293	**0.326**	1
		Right Side	6	2437	12.04	12.5	1.112	0.158	0.176	
		Top Side	6	2437	12.04	12.5	1.112	0.142	0.158	

WIFI 5.1G										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	a	Left Cheek	36	5180	10.62	11.0	1.091	0.425	0.464	
		Left Tilt	36	5180	10.62	11.0	1.091	0.698	0.762	
		Right Cheek	36	5180	10.62	11.0	1.091	0.483	0.527	
		Right Tilt	36	5180	10.62	11.0	1.091	0.638	0.696	
Body (10mm)	a	Front Face	36	5180	10.62	11.0	1.091	0.553	0.604	
		Back Face	36	5180	10.62	11.0	1.091	0.682	0.744	
		Right Side	36	5180	10.62	11.0	1.091	0.702	0.766	
		Top Side	36	5180	10.62	11.0	1.091	0.710	**0.775**	2

WIFI 5.8G										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	a	Left Cheek	165	5825	10.42	11.0	1.143	0.571	0.653	
		Left Tilt	165	5825	10.42	11.0	1.143	0.582	0.665	
		Right Cheek	165	5825	10.42	11.0	1.143	0.691	0.790	
		Right Tilt	165	5825	10.42	11.0	1.143	0.502	0.574	
Body (10mm)	a	Front Face	157	5785	10.42	11.0	1.143	0.542	0.619	
		Back Face	157	5785	10.42	11.0	1.143	0.653	0.746	
		Right Side	157	5785	10.42	11.0	1.143	0.591	0.675	
		Top Side	157	5785	10.42	11.0	1.143	0.760	**0.869**	3

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

GSM 850										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	GSM	Left Cheek	190	836.6	33.92	34.5	1.143	0.185	0.211	
		Left Tilt	190	836.6	33.92	34.5	1.143	0.167	0.191	
		Right Cheek	190	836.6	33.92	34.5	1.143	0.131	0.150	
		Right Tilt	190	836.6	33.92	34.5	1.143	0.199	0.227	
Body (10mm)	GSM	Front Face	190	836.6	33.92	34.5	1.143	0.222	0.254	
		Back Face	190	836.6	33.92	34.5	1.143	0.519	0.593	
	GPRS	Front Face	190	836.6	33.05	33.5	1.109	0.325	0.360	
		Back Face	190	836.6	33.05	33.5	1.109	0.716	**0.794**	4
		Left Side	190	836.6	33.05	33.5	1.109	0.156	0.173	
		Right Side	190	836.6	33.05	33.5	1.109	0.247	0.274	
		Bottom Side	190	836.6	33.05	33.5	1.109	0.406	0.450	

GSM 1900										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	GSM	Left Cheek	512	1850.2	31.59	32.0	1.099	0.095	0.104	
		Left Tilt	512	1850.2	31.59	32.0	1.099	0.189	0.208	
		Right Cheek	512	1850.2	31.59	32.0	1.099	0.142	0.156	
		Right Tilt	512	1850.2	31.59	32.0	1.099	0.191	0.210	
Body (10mm)	GSM	Front Face	512	1850.2	31.59	32.0	1.099	0.366	0.402	
		Back Face	512	1850.2	31.59	32.0	1.099	0.464	0.510	
	GPRS	Front Face	661	1880	30.66	31.0	1.081	0.518	0.560	
		Back Face	661	1880	30.66	31.0	1.081	0.486	0.526	
		Left Side	661	1880	30.66	31.0	1.081	0.432	0.467	
		Right Side	661	1880	30.66	31.0	1.081	0.197	0.213	
		Bottom Side	661	1880	30.66	31.0	1.081	0.650	**0.703**	5

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

WCDMA Band II										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	RMC	Left Cheek	9262	1852.4	24.33	25.0	1.167	0.151	0.176	
		Left Tilt	9262	1852.4	24.33	25.0	1.167	0.265	0.309	
		Right Cheek	9262	1852.4	24.33	25.0	1.167	0.165	0.193	
		Right Tilt	9262	1852.4	24.33	25.0	1.167	0.281	0.328	
Body (10mm)	RMC	Front Face	9262	1852.4	24.33	25.0	1.167	0.664	**0.775**	6
		Back Face	9262	1852.4	24.33	25.0	1.167	0.553	0.645	
		Left Side	9262	1852.4	24.33	25.0	1.167	0.485	0.566	
		Right Side	9262	1852.4	24.33	25.0	1.167	0.231	0.270	
		Bottom Side	9262	1852.4	24.33	25.0	1.167	0.616	0.719	

WCDMA Band IV										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	RMC	Left Cheek	1450	1740	24.28	24.5	1.052	0.104	0.109	
		Left Tilt	1450	1740	24.28	24.5	1.052	0.197	0.207	
		Right Cheek	1450	1740	24.28	24.5	1.052	0.114	0.120	
		Right Tilt	1450	1740	24.28	24.5	1.052	0.193	0.203	
Body (10mm)	RMC	Front Face	1450	1740	24.28	24.5	1.052	0.428	0.450	
		Back Face	1450	1740	24.28	24.5	1.052	0.507	**0.533**	7
		Left Side	1450	1740	24.28	24.5	1.052	0.397	0.418	
		Right Side	1450	1740	24.28	24.5	1.052	0.136	0.143	
		Bottom Side	1450	1740	24.28	24.5	1.052	0.460	0.484	

WCDMA Band V										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	RMC	Left Cheek	4182	836.4	24.00	24.5	1.122	0.148	0.166	
		Left Tilt	4182	836.4	24.00	24.5	1.122	0.153	0.172	
		Right Cheek	4182	836.4	24.00	24.5	1.122	0.091	0.102	
		Right Tilt	4182	836.4	24.00	24.5	1.122	0.179	0.201	
Body (10mm)	RMC	Front Face	4182	836.4	24.00	24.5	1.122	0.232	0.260	
		Back Face	4182	836.4	24.00	24.5	1.122	0.338	**0.379**	8
		Left Side	4182	836.4	24.00	24.5	1.122	0.133	0.149	
		Right Side	4182	836.4	24.00	24.5	1.122	0.177	0.199	
		Bottom Side	4182	836.4	24.00	24.5	1.122	0.215	0.241	

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

LTE Band 2 (20MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	1RB	Left Cheek	18700	1860.0	25.08	25.5	1.102	0.487	0.536	
		Left Tilt	18700	1860.0	25.08	25.5	1.102	0.268	0.295	
		Right Cheek	18700	1860.0	25.08	25.5	1.102	0.211	0.232	
		Right Tilt	18700	1860.0	25.08	25.5	1.102	0.261	0.288	
	50%RB	Left Cheek	18700	1860.0	23.81	24.5	1.172	0.413	0.484	
		Left Tilt	18700	1860.0	23.81	24.5	1.172	0.284	0.333	
		Right Cheek	18700	1860.0	23.81	24.5	1.172	0.188	0.220	
		Right Tilt	18700	1860.0	23.81	24.5	1.172	0.233	0.273	
Body (10mm)	1RB	Front Face	18700	1860.0	25.08	25.5	1.102	0.473	0.521	
		Back Face	18700	1860.0	25.08	25.5	1.102	0.527	0.581	
		Left Side	18700	1860.0	25.08	25.5	1.102	0.365	0.402	
		Right Side	18700	1860.0	25.08	25.5	1.102	0.189	0.208	
		Bottom Side	18700	1860.0	25.08	25.5	1.102	0.540	0.595	
	50%RB	Front Face	18700	1860.0	23.81	24.5	1.172	0.382	0.448	
		Back Face	18700	1860.0	23.81	24.5	1.172	0.432	0.506	
		Left Side	18700	1860.0	23.81	24.5	1.172	0.347	0.407	
		Right Side	18700	1860.0	23.81	24.5	1.172	0.161	0.189	
		Bottom Side	18700	1860.0	23.81	24.5	1.172	0.515	**0.604**	9

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

LTE Band 4 (20MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	1RB	Left Cheek	20175	1732.5	24.48	25.0	1.127	0.162	0.183	
		Left Tilt	20175	1732.5	24.48	25.0	1.127	0.229	0.258	
		Right Cheek	20175	1732.5	24.48	25.0	1.127	0.151	0.170	
		Right Tilt	20175	1732.5	24.48	25.0	1.127	0.236	0.266	
	50%RB	Left Cheek	20175	1732.5	23.35	24.0	1.161	0.128	0.149	
		Left Tilt	20175	1732.5	23.35	24.0	1.161	0.185	0.215	
		Right Cheek	20175	1732.5	23.35	24.0	1.161	0.137	0.159	
		Right Tilt	20175	1732.5	23.35	24.0	1.161	0.221	0.257	
Body (10mm)	1RB	Front Face	20175	1732.5	24.48	25.0	1.127	0.426	**0.480**	10
		Back Face	20175	1732.5	24.48	25.0	1.127	0.368	0.415	
		Left Side	20175	1732.5	24.48	25.0	1.127	0.286	0.322	
		Right Side	20175	1732.5	24.48	25.0	1.127	0.230	0.259	
		Bottom Side	20175	1732.5	24.48	25.0	1.127	0.394	0.444	
	50%RB	Front Face	20175	1732.5	23.35	24.0	1.161	0.311	0.361	
		Back Face	20175	1732.5	23.35	24.0	1.161	0.356	0.413	
		Left Side	20175	1732.5	23.35	24.0	1.161	0.281	0.326	
		Right Side	20175	1732.5	23.35	24.0	1.161	0.152	0.177	
		Bottom Side	20175	1732.5	23.35	24.0	1.161	0.393	0.456	

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

LTE Band 5 (10MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	1RB	Left Cheek	20525	836.5	24.15	24.5	1.084	0.184	0.199	
		Left Tilt	20525	836.5	24.15	24.5	1.084	0.148	0.160	
		Right Cheek	20525	836.5	24.15	24.5	1.084	0.154	0.167	
		Right Tilt	20525	836.5	24.15	24.5	1.084	0.238	0.258	
	50%RB	Left Cheek	20450	829.0	23.01	23.5	1.119	0.122	0.137	
		Left Tilt	20450	829.0	23.01	23.5	1.119	0.134	0.150	
		Right Cheek	20450	829.0	23.01	23.5	1.119	0.102	0.114	
		Right Tilt	20450	829.0	23.01	23.5	1.119	0.202	0.226	
Body (10mm)	1RB	Front Face	20525	836.5	24.15	24.5	1.084	0.191	0.207	
		Back Face	20525	836.5	24.15	24.5	1.084	0.434	**0.470**	11
		Left Side	20525	836.5	24.15	24.5	1.084	0.188	0.204	
		Right Side	20525	836.5	24.15	24.5	1.084	0.157	0.170	
		Bottom Side	20525	836.5	24.15	24.5	1.084	0.232	0.251	
	50%RB	Front Face	20450	829.0	23.01	23.5	1.119	0.189	0.212	
		Back Face	20450	829.0	23.01	23.5	1.119	0.378	0.423	
		Left Side	20450	829.0	23.01	23.5	1.119	0.149	0.167	
		Right Side	20450	829.0	23.01	23.5	1.119	0.146	0.163	
		Bottom Side	20450	829.0	23.01	23.5	1.119	0.189	0.212	

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

LTE Band 7 (20MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	1RB	Left Cheek	20850	2510	24.90	25.5	1.148	0.187	0.215	
		Left Tilt	20850	2510	24.90	25.5	1.148	0.255	0.293	
		Right Cheek	20850	2510	24.90	25.5	1.148	0.148	0.170	
		Right Tilt	20850	2510	24.90	25.5	1.148	0.284	0.326	
	50%RB	Left Cheek	21100	2535	23.74	24.0	1.062	0.251	0.266	
		Left Tilt	21100	2535	23.74	24.0	1.062	0.245	0.260	
		Right Cheek	21100	2535	23.74	24.0	1.062	0.126	0.134	
		Right Tilt	21100	2535	23.74	24.0	1.062	0.219	0.233	
Body (10mm)	1RB	Front Face	20850	2510	24.90	25.5	1.148	0.375	0.431	
		Back Face	20850	2510	24.90	25.5	1.148	0.647	0.743	
		Left Side	20850	2510	24.90	25.5	1.148	0.466	0.535	
		Right Side	20850	2510	24.90	25.5	1.148	0.189	0.217	
		Bottom Side	20850	2510	24.90	25.5	1.148	0.807	0.927	
		Bottom Side	21100	2535	24.73	25.5	1.194	0.914	**1.091**	12
		Bottom Side	21350	2560	24.41	25.5	1.285	0.841	1.081	
	50%RB	Front Face	21100	2535	23.74	24.0	1.062	0.289	0.307	
		Back Face	21100	2535	23.74	24.0	1.062	0.388	0.412	
		Left Side	21100	2535	23.74	24.0	1.062	0.431	0.458	
		Right Side	21100	2535	23.74	24.0	1.062	0.169	0.179	
		Bottom Side	21100	2535	23.74	24.0	1.062	0.728	0.773	
		Bottom Side	20850	2510	23.69	24.0	1.074	0.814	0.874	
		Bottom Side	21350	2560	23.44	24.0	1.138	0.754	0.858	
	100%RB	Bottom Side	21100	2535	23.61	24.0	1.094	0.773	0.846	

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

LTE Band 12 (10MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	1RB	Left Cheek	23060	704.0	23.92	24.5	1.143	0.167	0.191	
		Left Tilt	23060	704.0	23.92	24.5	1.143	0.143	0.163	
		Right Cheek	23060	704.0	23.92	24.5	1.143	0.140	0.160	
		Right Tilt	23060	704.0	23.92	24.5	1.143	0.161	0.184	
	50%RB	Left Cheek	23095	707.5	22.90	23.5	1.148	0.147	0.169	
		Left Tilt	23095	707.5	22.90	23.5	1.148	0.066	0.076	
		Right Cheek	23095	707.5	22.90	23.5	1.148	0.093	0.107	
		Right Tilt	23095	707.5	22.90	23.5	1.148	0.129	0.148	
Body (10mm)	1RB	Front Face	23060	704.0	23.92	24.5	1.143	0.161	0.184	
		Back Face	23060	704.0	23.92	24.5	1.143	0.195	**0.223**	13
		Left Side	23060	704.0	23.92	24.5	1.143	0.186	0.213	
		Right Side	23060	704.0	23.92	24.5	1.143	0.171	0.195	
		Bottom Side	23060	704.0	23.92	24.5	1.143	0.097	0.111	
	50%RB	Front Face	23095	707.5	22.90	23.5	1.148	0.122	0.140	
		Back Face	23095	707.5	22.90	23.5	1.148	0.189	0.217	
		Left Side	23095	707.5	22.90	23.5	1.148	0.149	0.171	
		Right Side	23095	707.5	22.90	23.5	1.148	0.092	0.106	
		Bottom Side	23095	707.5	22.90	23.5	1.148	0.112	0.129	

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

FDD-LTE Band 17 (10MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)			SAR1g (W/kg)		Plot No.
					Meas.	Turn-up	Scaling Factor	Meas.	Scaled	
Head (0mm)	1RB	Left Cheek	23800	711	23.96	24.5	1.132	0.150	0.170	
		Left Tilt	23800	711	23.96	24.5	1.132	0.113	0.128	
		Right Cheek	23800	711	23.96	24.5	1.132	0.124	0.140	
		Right Tilt	23800	711	23.96	24.5	1.132	0.166	0.188	
	50%RB	Left Cheek	23780	709	23.02	23.5	1.117	0.140	0.156	
		Left Tilt	23780	709	23.02	23.5	1.117	0.091	0.102	
		Right Cheek	23780	709	23.02	23.5	1.117	0.083	0.093	
		Right Tilt	23780	709	23.02	23.5	1.117	0.127	0.142	
Body (10mm)	1RB	Front Face	23800	711	23.96	24.5	1.132	0.160	0.181	
		Back Face	23800	711	23.96	24.5	1.132	0.235	**0.266**	14
		Left Side	23800	711	23.96	24.5	1.132	0.135	0.153	
		Right Side	23800	711	23.96	24.5	1.132	0.164	0.186	
		Bottom Side	23800	711	23.96	24.5	1.132	0.157	0.178	
	50%RB	Front Face	23780	709	23.02	23.5	1.117	0.116	0.130	
		Back Face	23780	709	23.02	23.5	1.117	0.195	0.218	
		Left Side	23780	709	23.02	23.5	1.117	0.133	0.149	
		Right Side	23780	709	23.02	23.5	1.117	0.106	0.118	
		Bottom Side	23780	709	23.02	23.5	1.117	0.075	0.084	

Remark:
1. The value with the bold is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels SAR tests are not necessary.

14.4 SAR Measurement Variability

According to KDB865664, Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations, which may introduce significant compliance concerns. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%, which are often related to device and measurement setup difficulties. The following procedures are applied to determine if repeated measurements are required. The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.19 The repeated measurement results must be clearly identified in the SAR report. All measured SAR, including the repeated results, must be considered to determine compliance and for reporting according to KDB 690783.Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

1) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
2) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20

Test Mode	Frequency Band (MHz)	RF Exposure Configuration	Test Position	Repeated SAR (yes/no)	Highest Measured SAR1-g (W/Kg)	First Repeated	
						Measured SAR1-g (W/Kg)	Largest to Smallest SAR Ratio
LTE Band 7 1RB	2535	Body	Bottom Side	Yes	0.914	0.897	1.019

14.5 Simultaneous Transmission Evaluation

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmiting antenna.

Application Simultaneous Transmission information:

No.	Configurations	Head SAR	Body SAR
1	WWAN+WIFI	Yes	Yes
2	WWAN+Bluetooth	Yes	Yes
3	WIFI+Bluetooth	No	No

Remark:
1. WWAN cannot transmit simultaneously.
2. Bluetooth and WIFI share the same antenna and cannot transmit data at the same time.
3. According to the KDB 447498 D01 v06, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
● (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[$\sqrt{}$ f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
● 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm

Estimated stand alone SAR						
Mode	Frequency (MHz)	Maximum Power (dBm)	Maximum Power (mW)	Separation Distance (mm)	X	Estimated SAR1-g (W/kg)
Bluetooth	2480	2.0	1.58	5	3	0.067
Bluetooth	2480	2.0	1.58	10	7.5	0.033

Note:
1. Bluetooth*- Including Lower power Bluetooth
2. Maximum average power including tune-up tolerance;
3. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4. Per FCC KD B447498 D01, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the transmitting antenna in a specific a physical test configuration is ≤1.6 W/Kg. When the sum is greater than the SAR limit, SAR test exclusion is determined by the SAR to peak location separation ratio.

$$\text{Ratio}=\frac{(SAR_1+SAR_2)^{1.5}}{(\text{peak location separation,mm})}<0.04$$

5. Simultaneous transmission of maximum SAR sum calculation.

RF Exposure Conditions	Test Position	WWAN	WIFI	Summed SAR (W/kg)	SAR1-g Limit (W/kg)
		Scaled SAR (W/kg)	Scaled SAR (W/kg)		
Head	Left Cheek	0.536	0.653	1.189	1.6
	Left Tilt	0.333	0.762	1.095	1.6
	Right Cheek	0.232	0.790	1.022	1.6
	Right Tilt	0.328	0.696	1.024	1.6
Body	Front Face	0.775	0.619	1.394	1.6
	Back Face	0.794	0.746	1.540	1.6
	Left Side	0.566	/	0.566	1.6
	Right Side	0.274	0.766	1.040	1.6
	Top Side	/	0.869	0.869	1.6
	Bottom Side	1.091	/	1.091	1.6

15. Test Plots

15.1 System Performance Check

System check at 750 MHz
Date of measurement: 28/04/2024

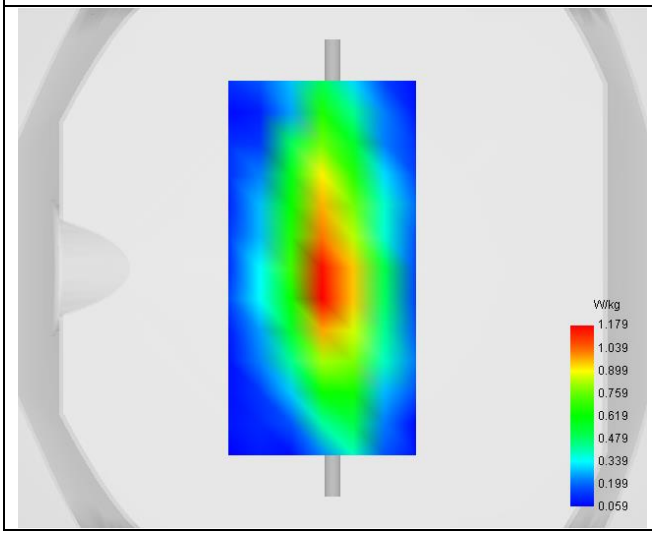
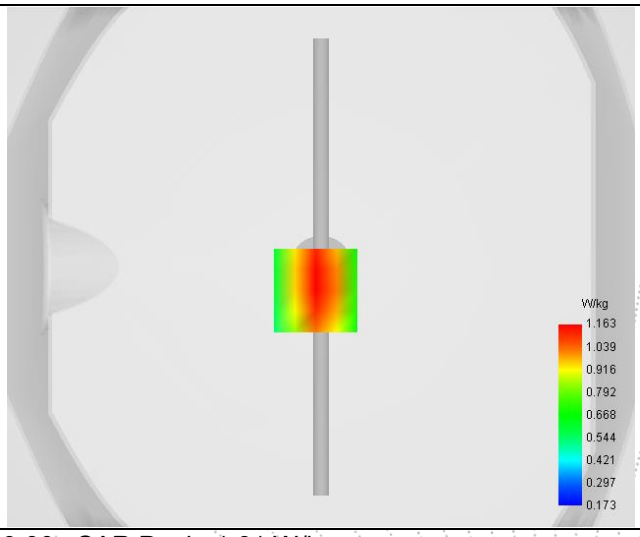
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.87
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	750.000
Relative permitivity (real part)	43.138
Relative permitivity (imaginary part)	24.595
Conductivity (S/m)	0.898

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

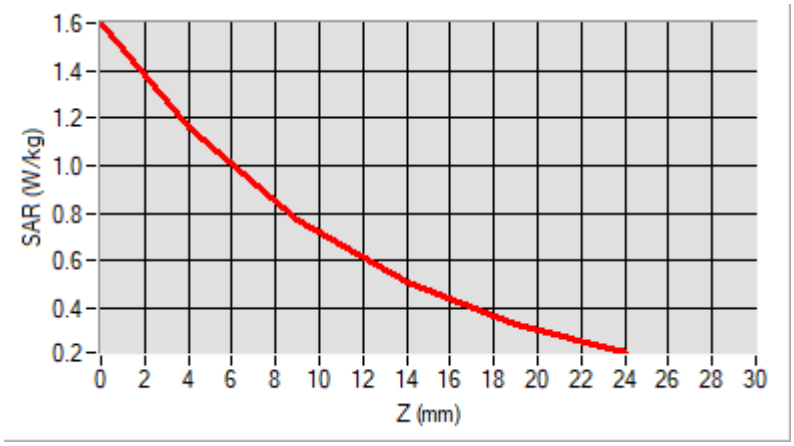
Maximum location: X=-2.00, Y=-9.00 ; SAR Peak: 1.61 W/kg

D. SAR 1g & 10g

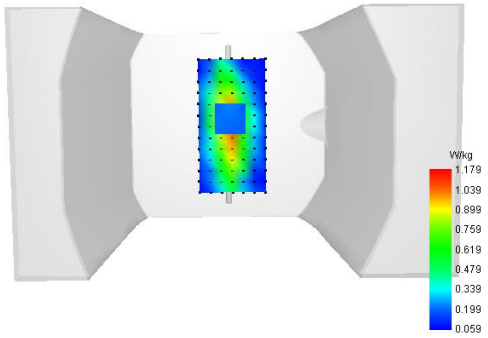
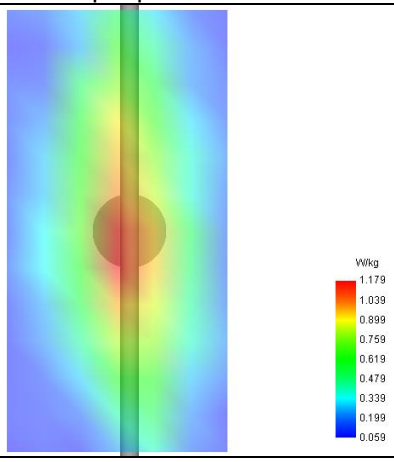
SAR 10g (W/Kg)	0.962
SAR 1g (W/Kg)	2.203
Variation (%)	2.122
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.603	1.163	0.769	0.506	0.333



F. 3D Image

3D screen shot	Hot spot position
	

System check at 835 MHz
Date of measurement: 28/04/2024

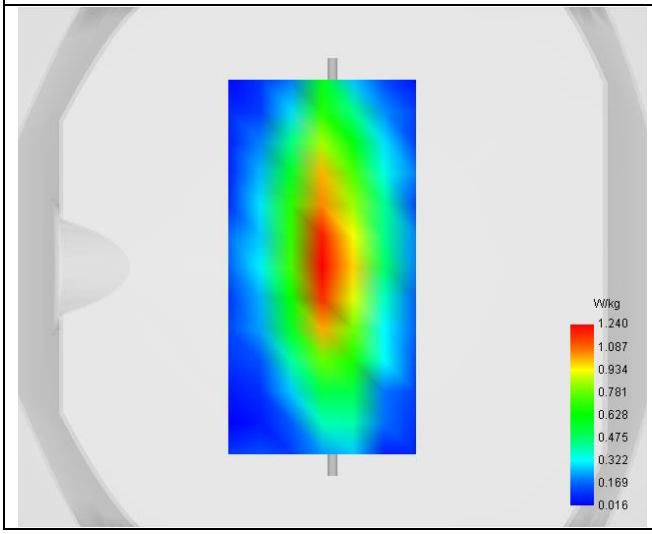
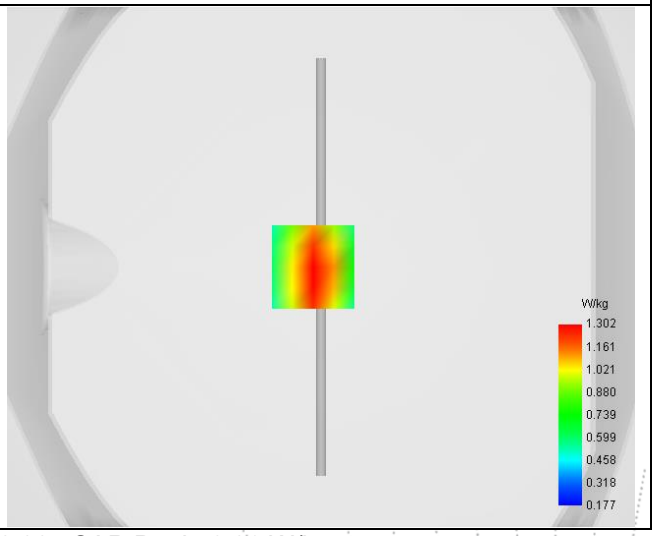
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.80
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	835.000
Relative permitivity (real part)	41.037
Relative permitivity (imaginary part)	20.910
Conductivity (S/m)	0.869

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

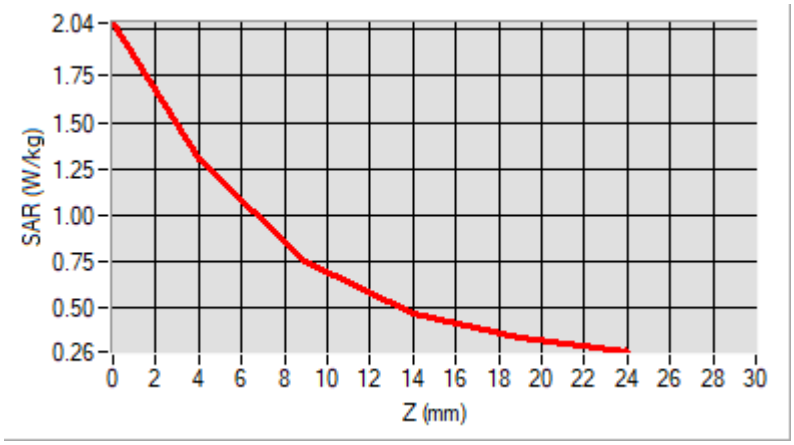
Maximum location: X=-3.00, Y=0.00 ; SAR Peak: 2.06 W/kg

D. SAR 1g & 10g

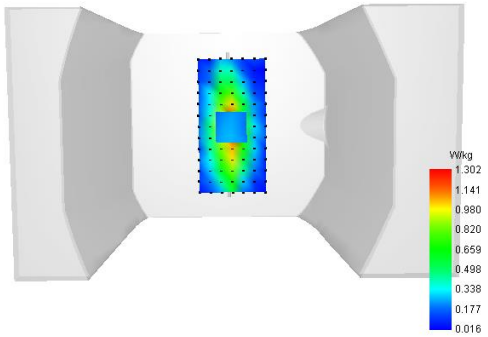
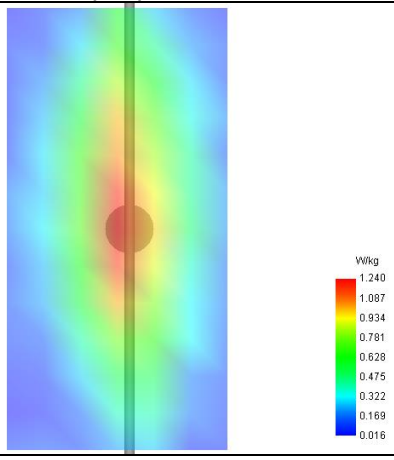
SAR 10g (W/Kg)	0.564
SAR 1g (W/Kg)	2.449
Variation (%)	0.879
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.036	1.302	0.747	0.462	0.331



F. 3D Image

3D screen shot	Hot spot position
	

System check at 1800 MHz
Date of measurement: 11/04/2024

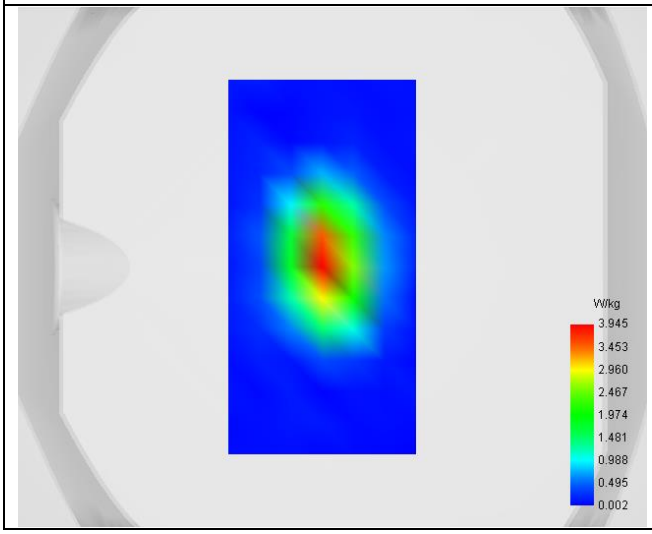
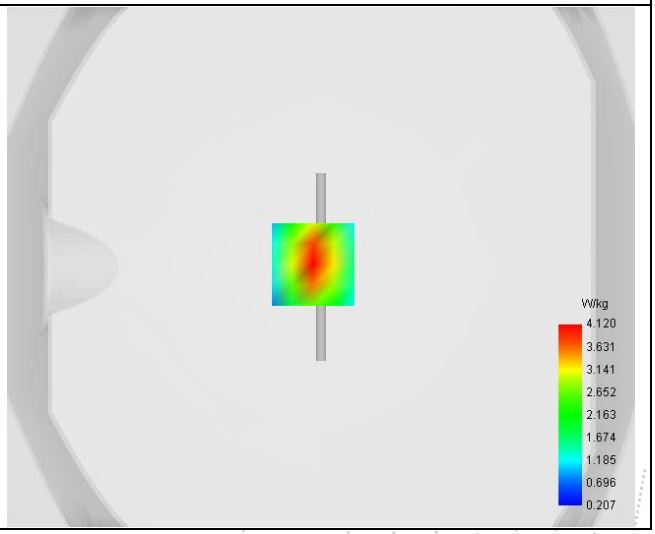
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.01
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	1800.000
Relative permitivity (real part)	39.155
Relative permitivity (imaginary part)	15.200
Conductivity (S/m)	1.349

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

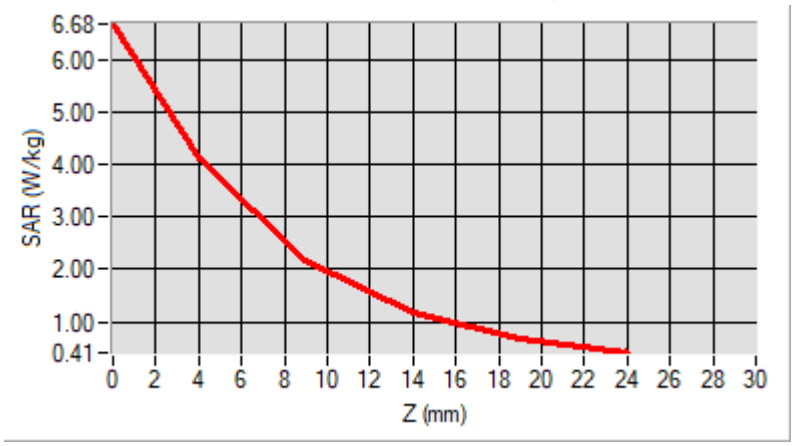
Maximum location: X=-3.00, Y=1.00 ; SAR Peak: 6.69 W/kg

D. SAR 1g & 10g

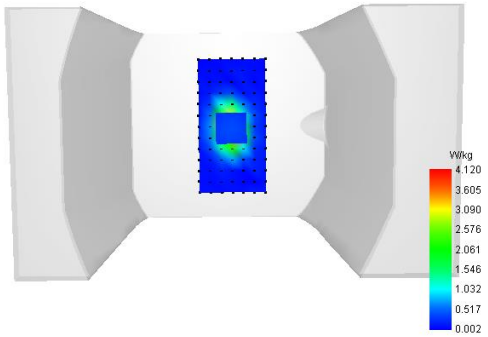
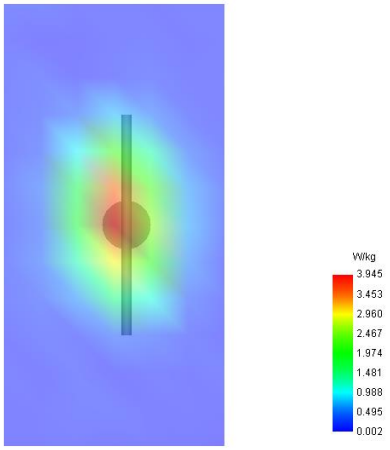
SAR 10g (W/Kg)	4.017
SAR 1g (W/Kg)	9.756
Variation (%)	1.436
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	6.684	4.120	2.184	1.177	0.685



F. 3D Image

3D screen shot	Hot spot position
	

System check at 1900 MHz
Date of measurement: 11/04/2024

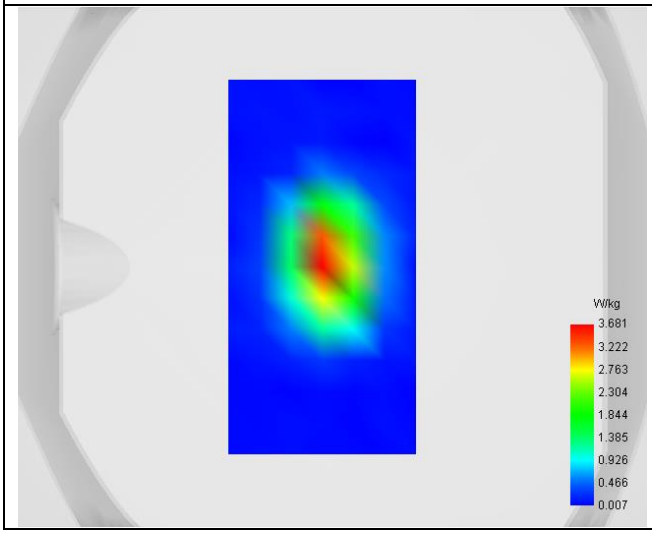
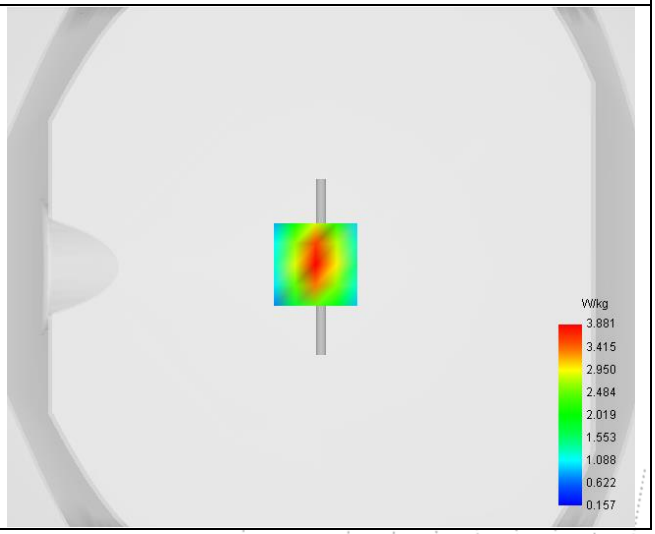
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.11
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	1900.000
Relative permitivity (real part)	40.132
Relative permitivity (imaginary part)	14.400
Conductivity (S/m)	1.362

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

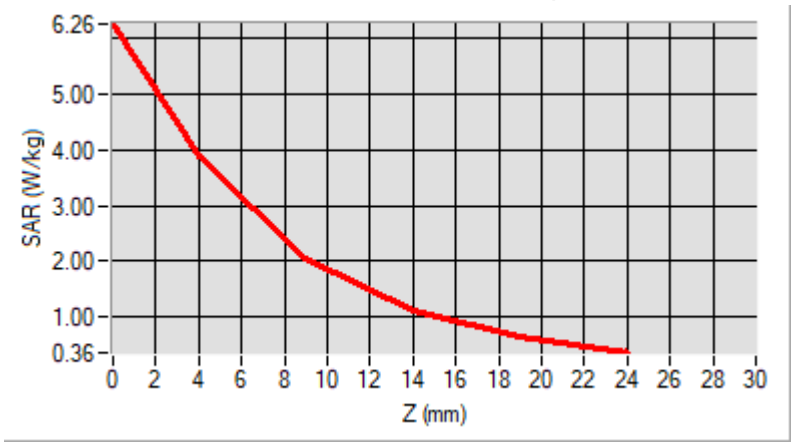
Maximum location: X=-2.00, Y=1.00 ; SAR Peak: 6.27 W/kg

D. SAR 1g & 10g

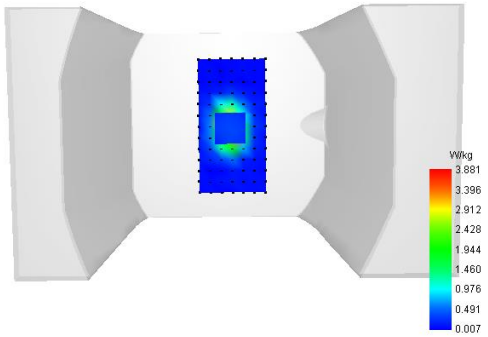
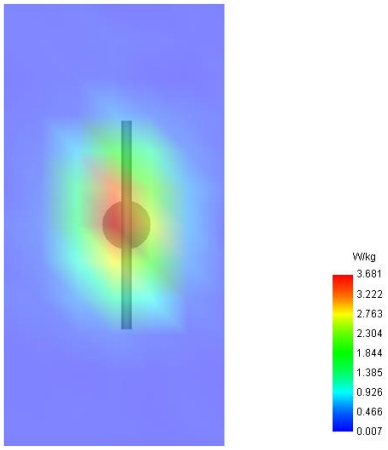
SAR 10g (W/Kg)	5.074
SAR 1g (W/Kg)	10.792
Variation (%)	0.779
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	6.259	3.881	2.069	1.111	0.634



F. 3D Image

3D screen shot	Hot spot position
	

System check at 2450 MHz
Date of measurement: 30/04/2024

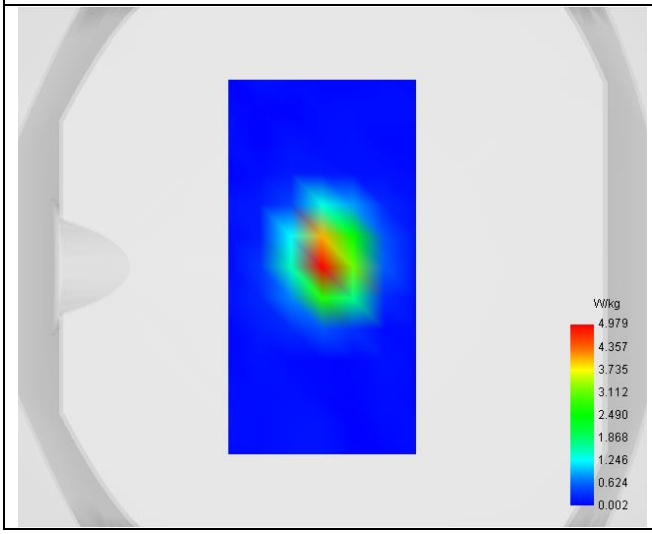
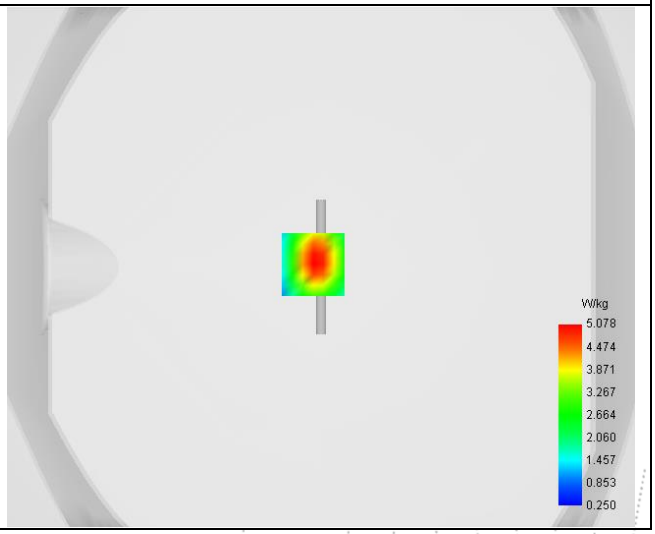
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.32
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2450.000
Relative permitivity (real part)	40.338
Relative permitivity (imaginary part)	14.330
Conductivity (S/m)	1.766

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

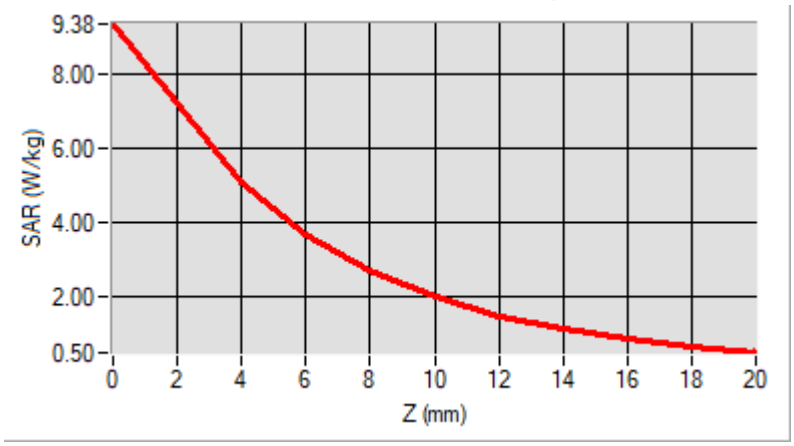
Maximum location: X=-3.00, Y=1.00 ; SAR Peak: 9.50 W/kg

D. SAR 1g & 10g

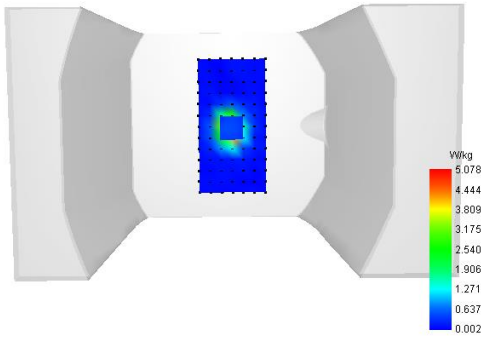
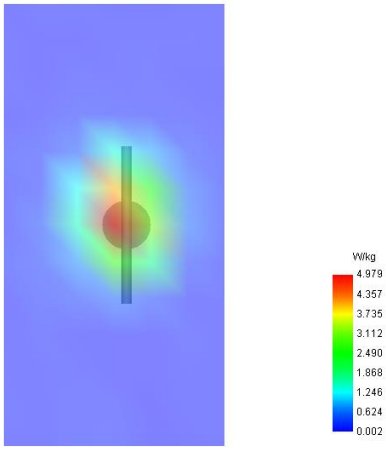
SAR 10g (W/Kg)	6.584
SAR 1g (W/Kg)	13.278
Variation (%)	3.210
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	9.380	5.078	3.712	2.709	2.001	1.499	1.138	0.871	0.667



F. 3D Image

3D screen shot	Hot spot position
	

System check at 2600 MHz
Date of measurement: 13/04/2024

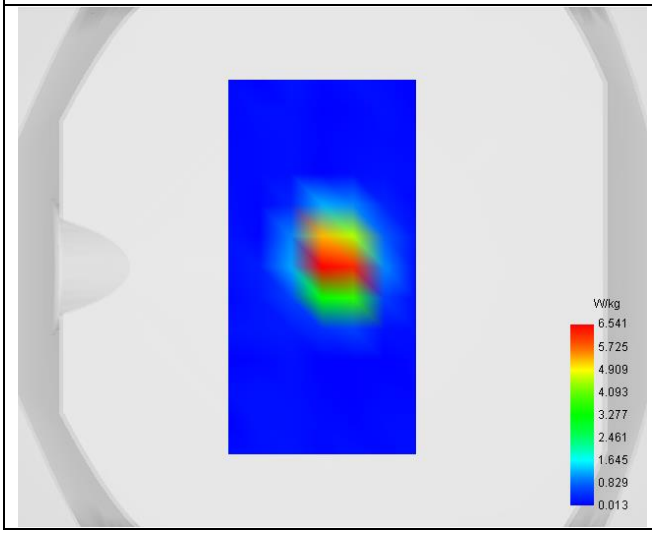
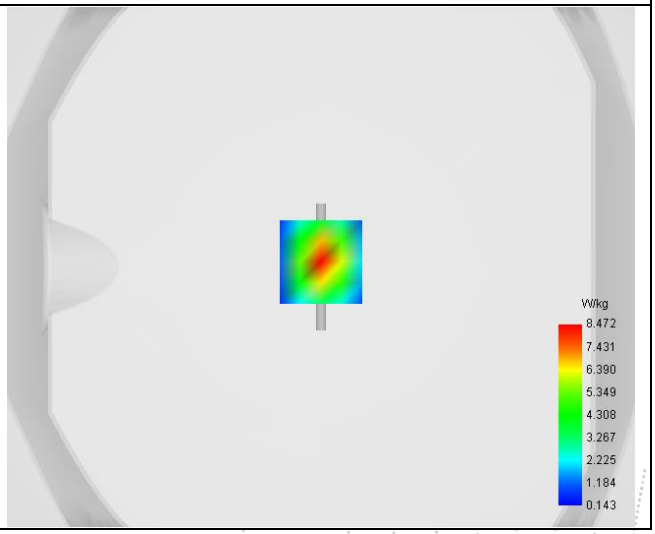
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.19
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2600.000
Relative permitivity (real part)	40.172
Relative permitivity (imaginary part)	14.889
Conductivity (S/m)	1.985

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

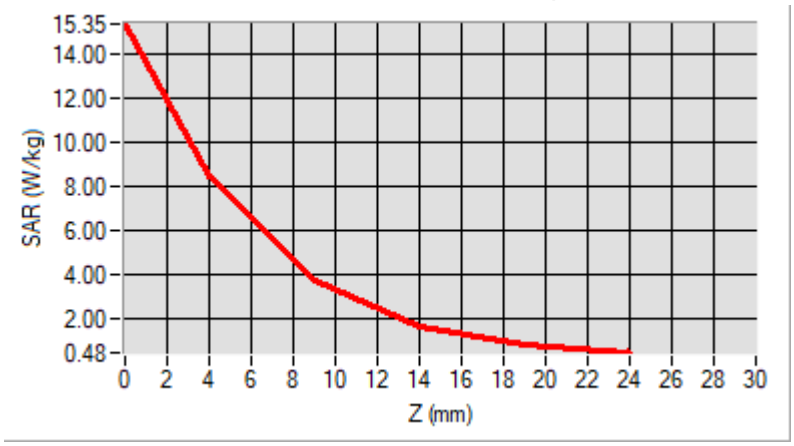
Maximum location: X=0.00, Y=2.00 ; SAR Peak: 15.35 W/kg

D. SAR 1g & 10g

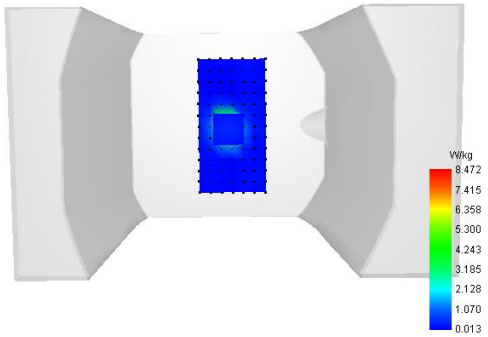
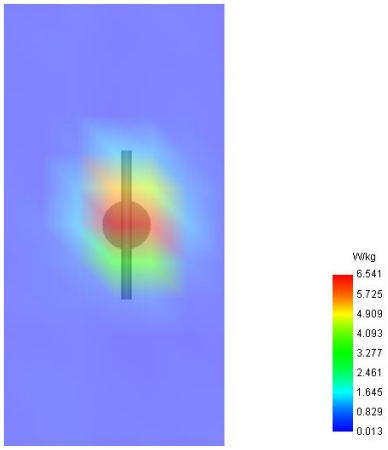
SAR 10g (W/Kg)	7.100
SAR 1g (W/Kg)	14.214
Variation (%)	-1.060
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	15.347	8.472	3.768	1.677	0.856



F. 3D Image

3D screen shot	Hot spot position
	

System check at 5200 MHz

Date of measurement: 30/04/2024

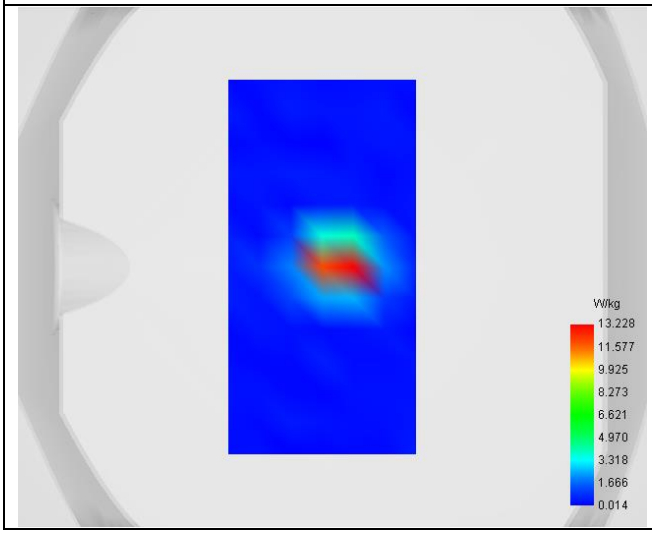
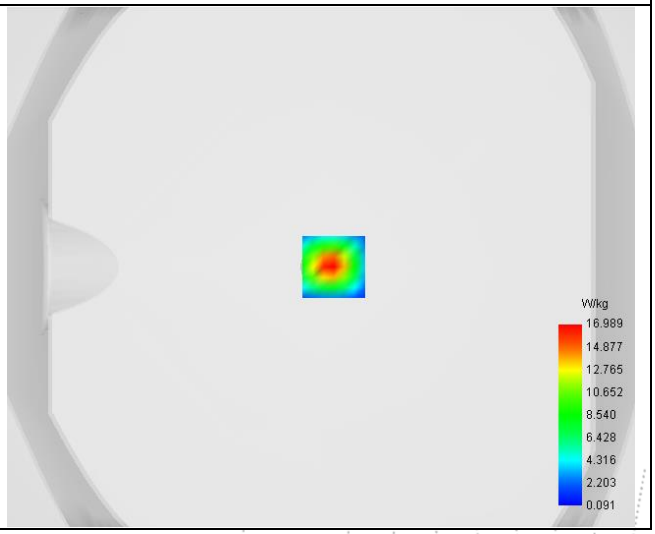
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.97
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	5200.000
Relative permitivity (real part)	35.460
Relative permitivity (imaginary part)	18.140
Conductivity (S/m)	4.775

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

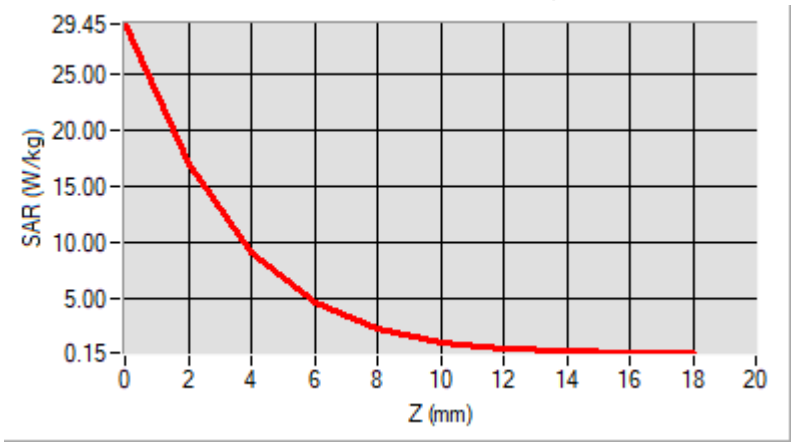
Maximum location: X=5.00, Y=0.00 ; SAR Peak: 30.79 W/kg

D. SAR 1g & 10g

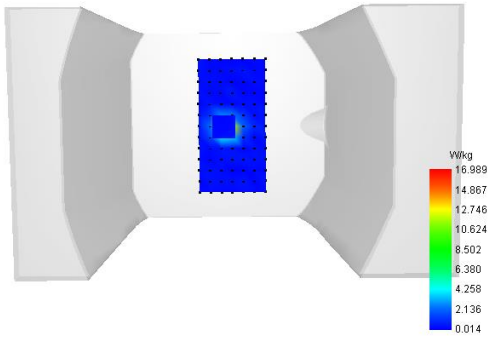
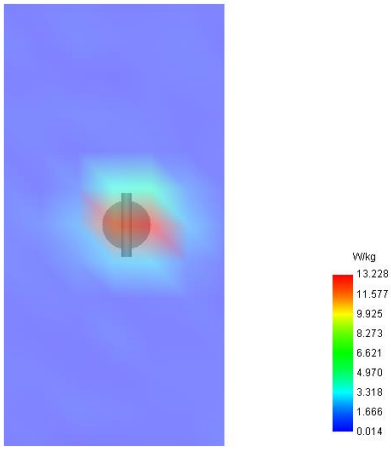
SAR 10g (W/Kg)	8.460
SAR 1g (W/Kg)	19.884
Variation (%)	-2.407
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	29.452	16.989	9.130	4.585	2.232	1.083	0.552	0.315	0.209



F. 3D Image

3D screen shot	Hot spot position
	

System check at 5800 MHz

Date of measurement: 30/04/2024

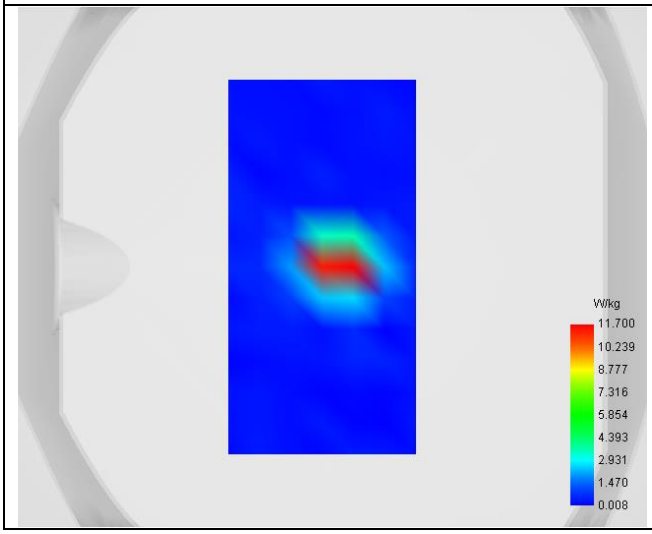
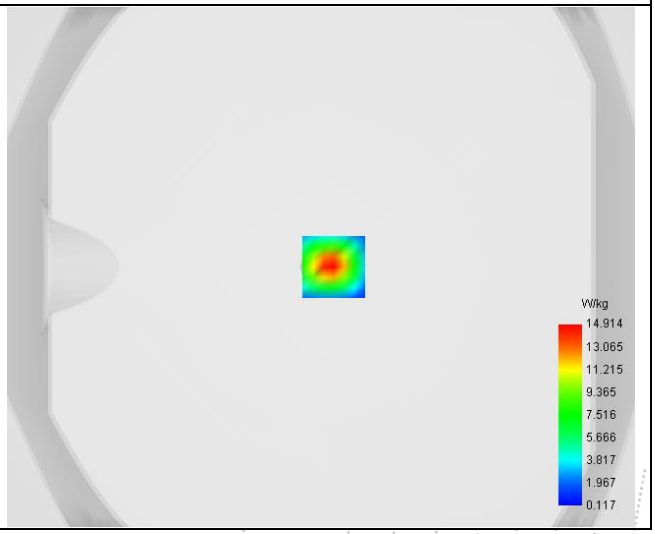
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.05
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	5800.000
Relative permitivity (real part)	35.755
Relative permitivity (imaginary part)	18.620
Conductivity (S/m)	5.413

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

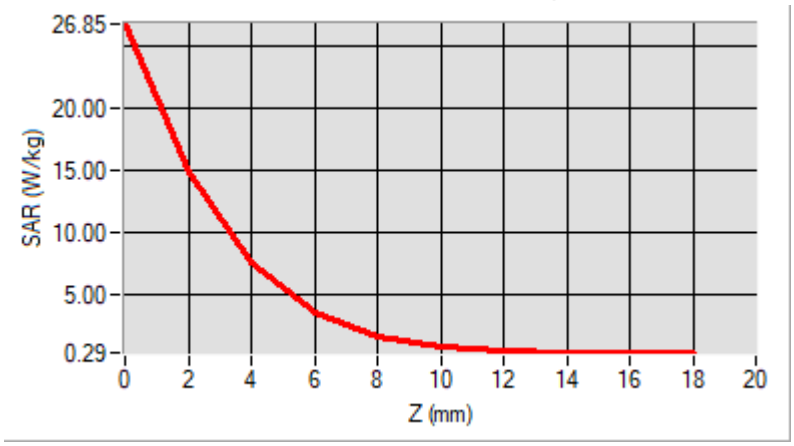
Maximum location: X=5.00, Y=0.00 ; SAR Peak: 28.22 W/kg

D. SAR 1g & 10g

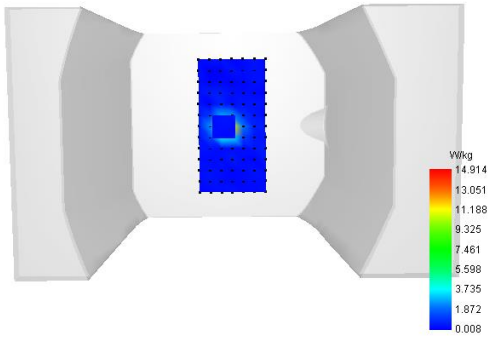
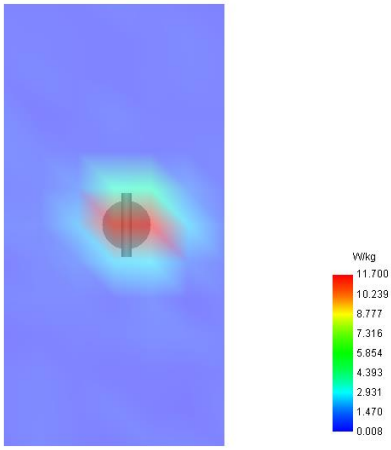
SAR 10g (W/Kg)	8.245
SAR 1g (W/Kg)	19.499
Variation (%)	-2.535
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	26.852	14.914	7.581	3.559	1.627	0.770	0.423	0.303	0.288



F. 3D Image

3D screen shot	Hot spot position
	

15.2 SAR Test Graph Results

Plot 1
Date of measurement: 30/04/2024

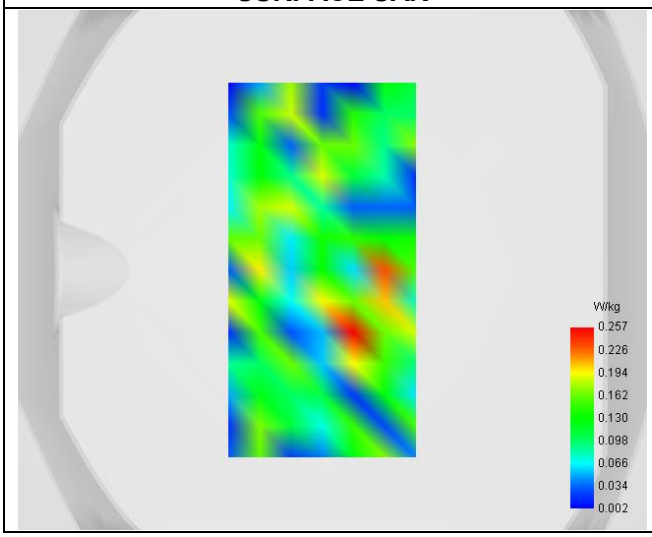
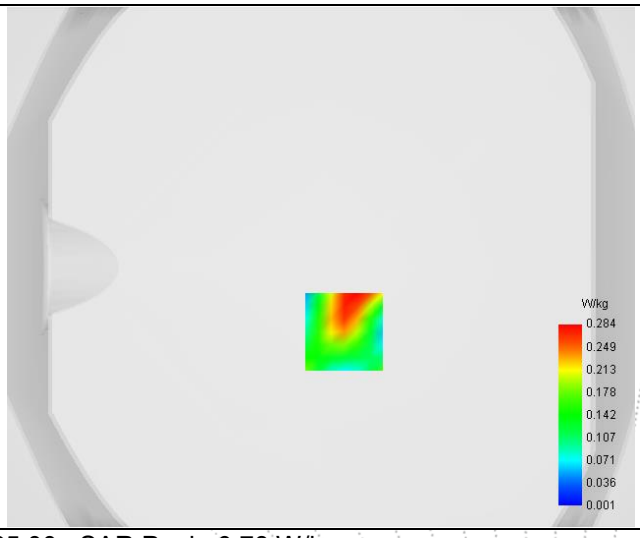
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.11
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	ISM
Channels	Middle (6)
Signal	IEEE 802.11 b

B. Permitivity

Frequency (MHz)	2437.000
Relative permitivity (real part)	40.338
Relative permitivity (imaginary part)	13.207
Conductivity (S/m)	1.766

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

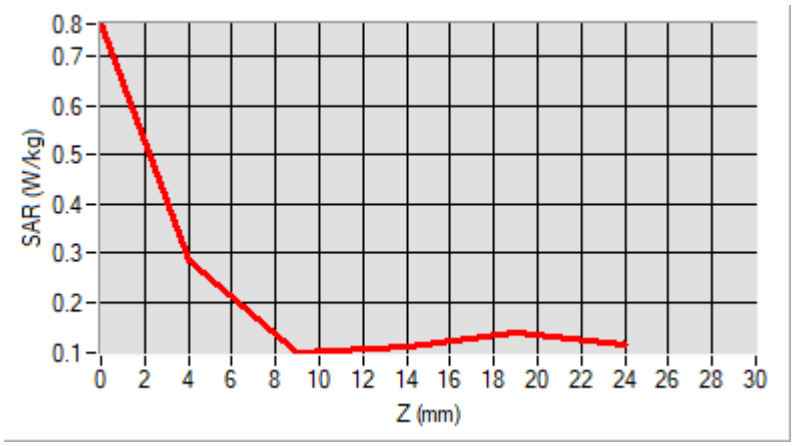
Maximum location: X=9.00, Y=-25.00 ; SAR Peak: 0.78 W/kg

D. SAR 1g & 10g

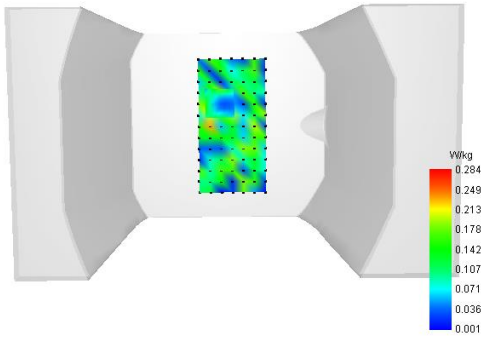
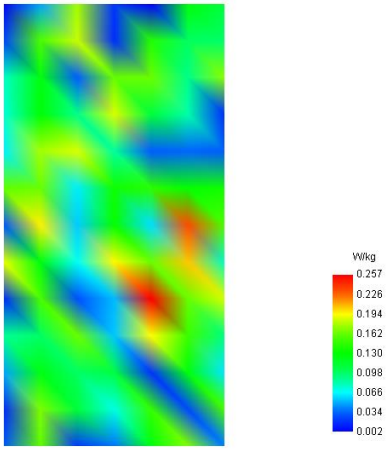
SAR 10g (W/Kg)	0.126
SAR 1g (W/Kg)	0.293
Variation (%)	2.890
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.766	0.284	0.098	0.109	0.138



F. 3D Image

3D screen shot	Hot spot position
	

Plot 2
Date of measurement: 30/04/2024

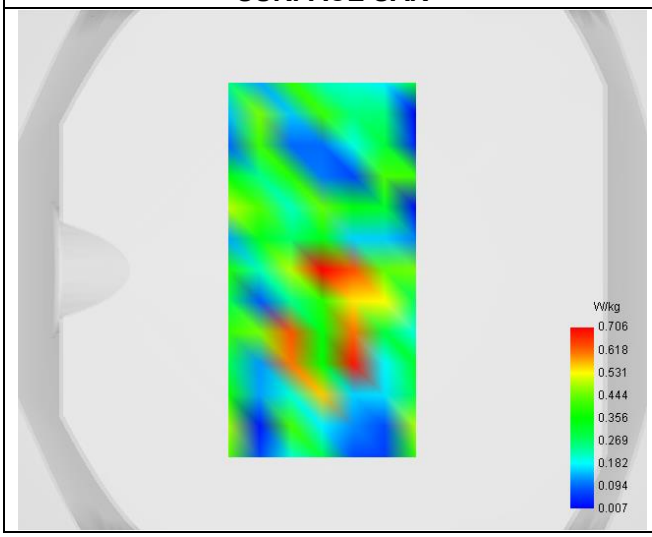
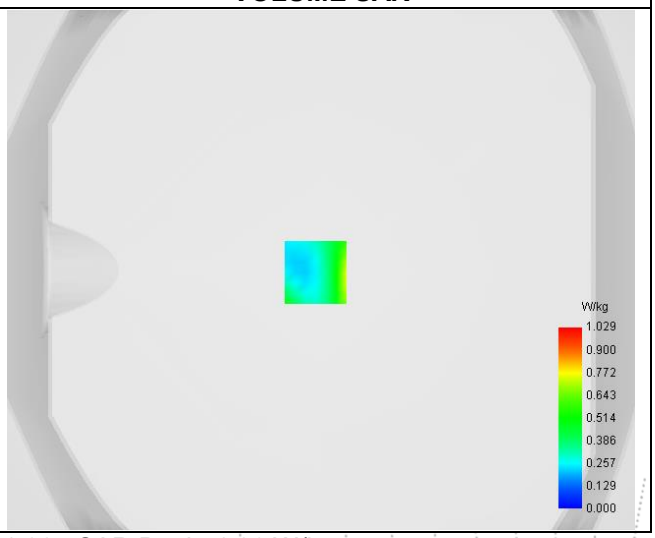
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.18
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Body
Band	5200
Channels	36
Signal	--

B. Permitivity

Frequency (MHz)	5180.000
Relative permitivity (real part)	35.460
Relative permitivity (imaginary part)	16.130
Conductivity (S/m)	4.775

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

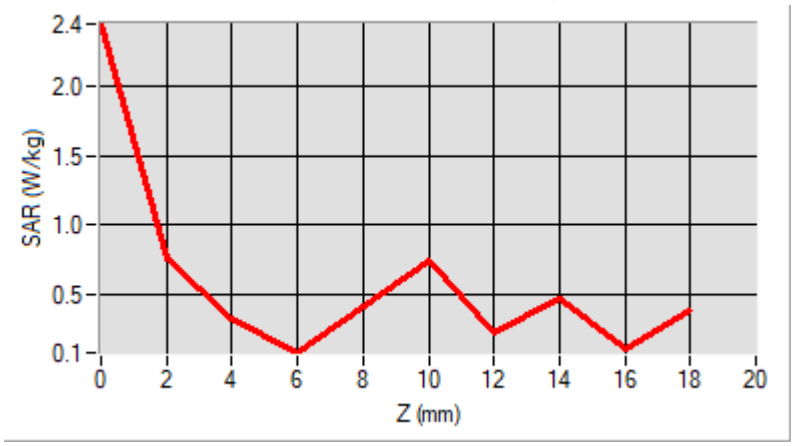
Maximum location: X=-2.00, Y=-1.00 ; SAR Peak: 1.86 W/kg

D. SAR 1g & 10g

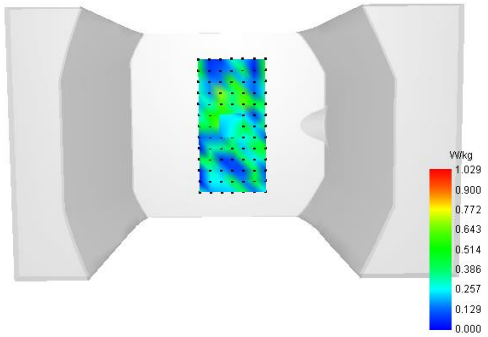
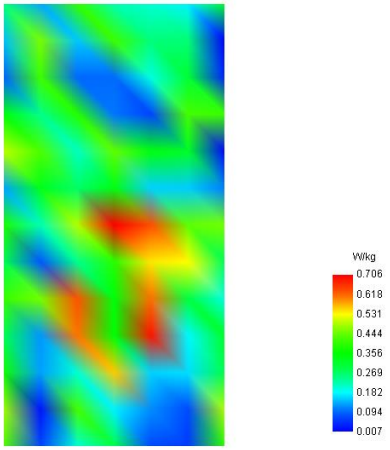
SAR 10g (W/Kg)	0.387
SAR 1g (W/Kg)	0.710
Variation (%)	-2.960
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	2.444	0.757	0.324	0.082	0.414	0.748	0.231	0.476	0.104



F. 3D Image

3D screen shot	Hot spot position
	

Plot 3
Date of measurement: 30/04/2024

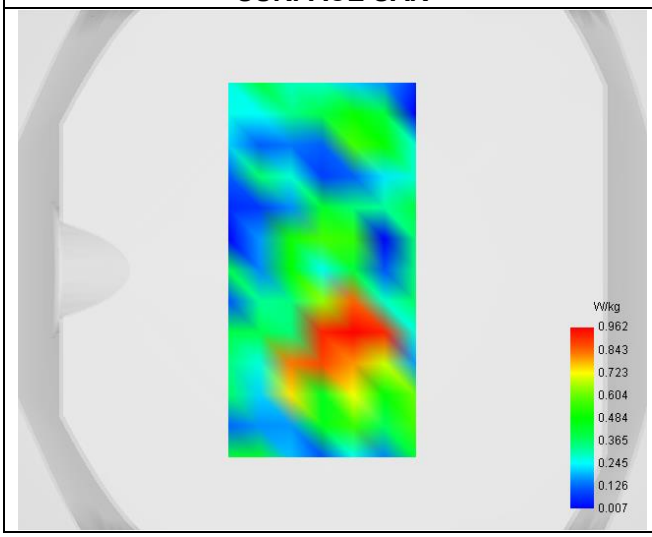
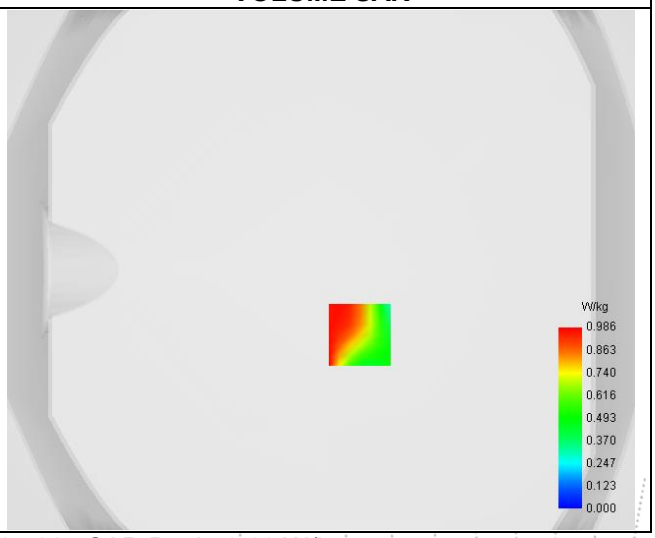
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.15
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Body
Band	5800
Channels	Middle (1)
Signal	--

B. Permitivity

Frequency (MHz)	5785.000
Relative permitivity (real part)	35.755
Relative permitivity (imaginary part)	16.355
Conductivity (S/m)	5.413

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

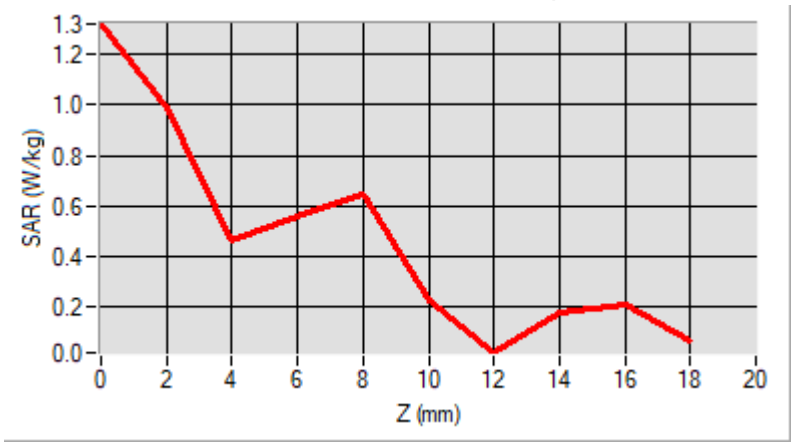
Maximum location: X=15.00, Y=-25.00 ; SAR Peak: 2.68 W/kg

D. SAR 1g & 10g

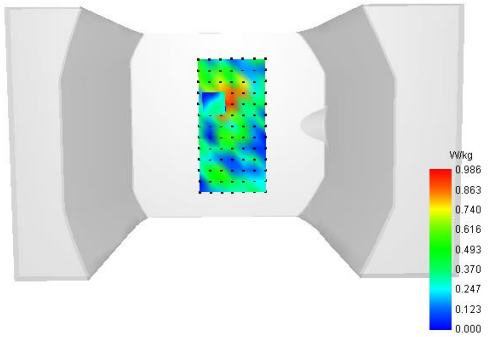
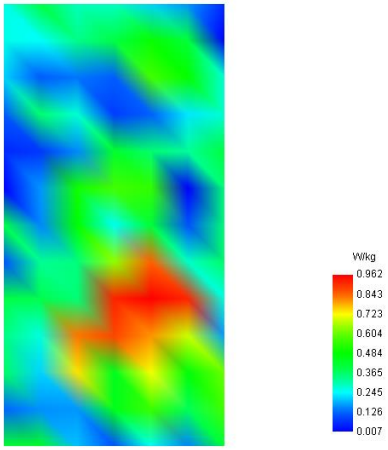
SAR 10g (W/Kg)	0.283
SAR 1g (W/Kg)	0.760
Variation (%)	-1.540
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	1.319	0.986	0.461	0.563	0.649	0.226	0.021	0.176	0.210



F. 3D Image

3D screen shot	Hot spot position
	

Plot 4
Date of measurement: 28/04/2024

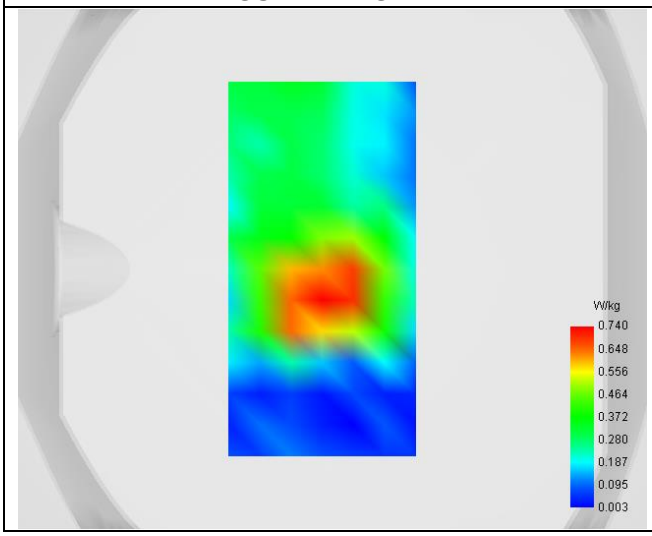
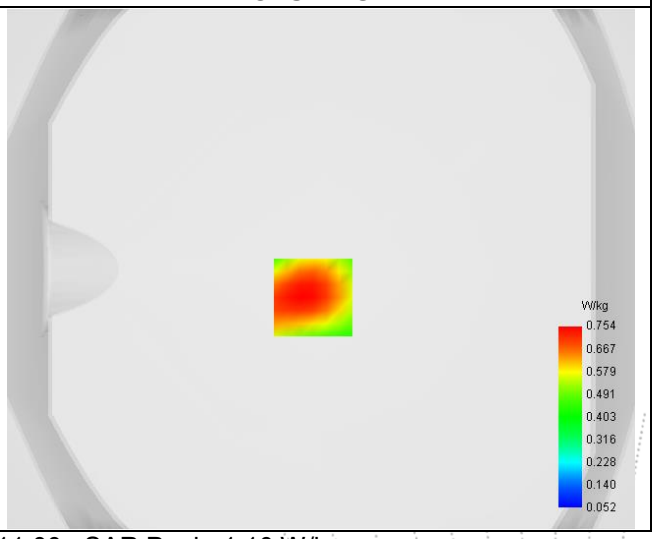
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.81
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	GPRS850
Channels	Middle (190)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	2

B. Permitivity

Frequency (MHz)	836.600
Relative permitivity (real part)	41.037
Relative permitivity (imaginary part)	19.400
Conductivity (S/m)	0.869

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

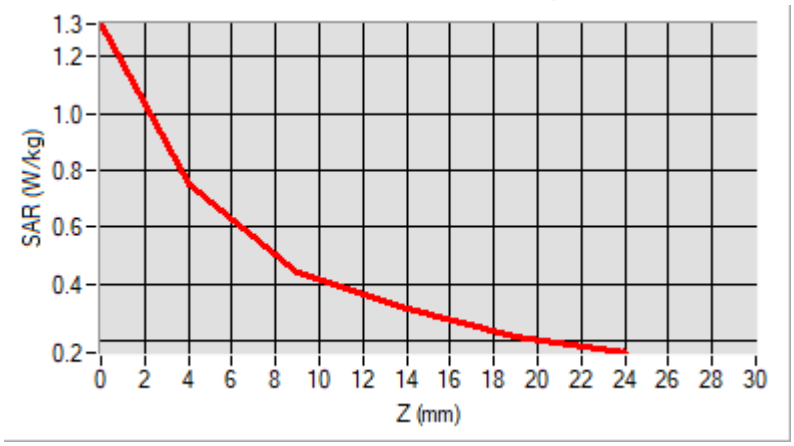
Maximum location: X=-3.00, Y=-11.00 ; SAR Peak: 1.10 W/kg

D. SAR 1g & 10g

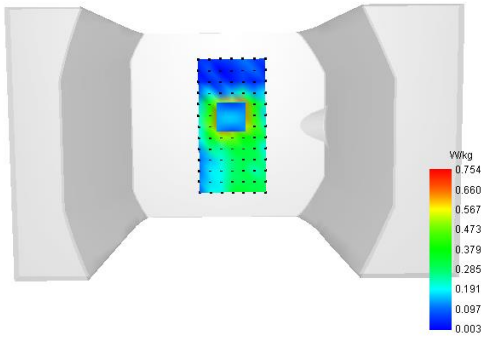
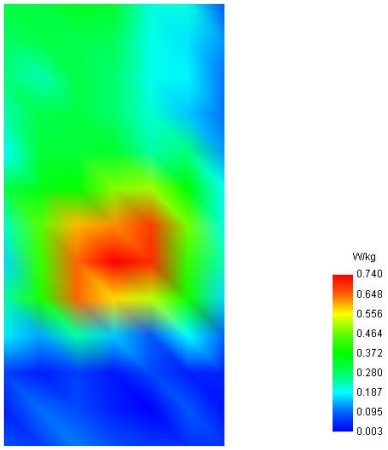
SAR 10g (W/Kg)	0.447
SAR 1g (W/Kg)	0.716
Variation (%)	1.690
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.316	0.754	0.443	0.309	0.213



F. 3D Image

3D screen shot	Hot spot position
	

Plot 5
Date of measurement: 11/04/2024

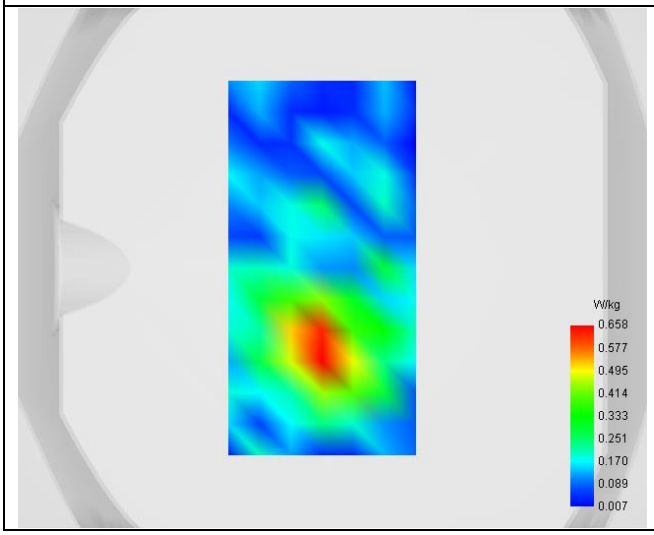
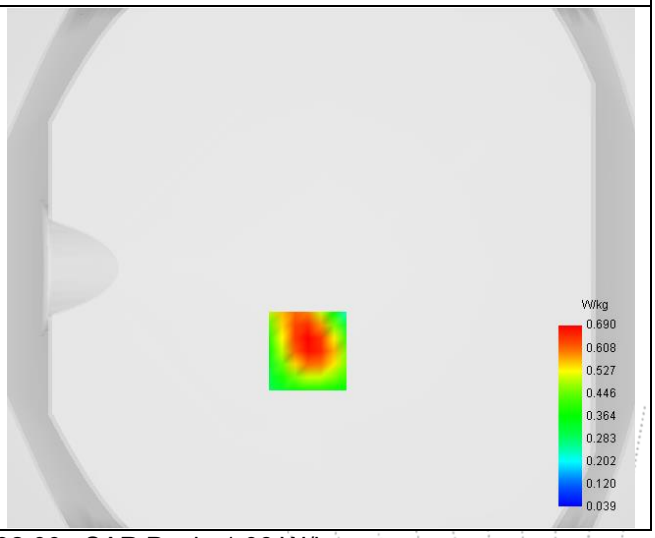
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.04
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	GPRS1900
Channels	Middle (661)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	2

B. Permitivity

Frequency (MHz)	1880.000
Relative permitivity (real part)	40.132
Relative permitivity (imaginary part)	13.408
Conductivity (S/m)	1.362

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

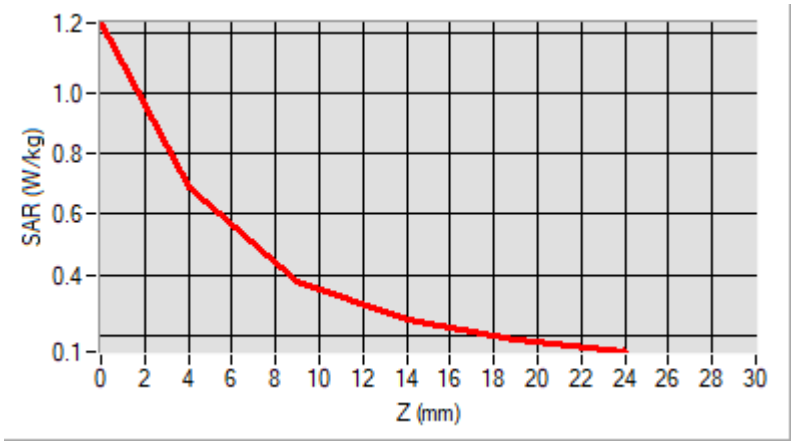
Maximum location: X=-5.00, Y=-32.00 ; SAR Peak: 1.08 W/kg

D. SAR 1g & 10g

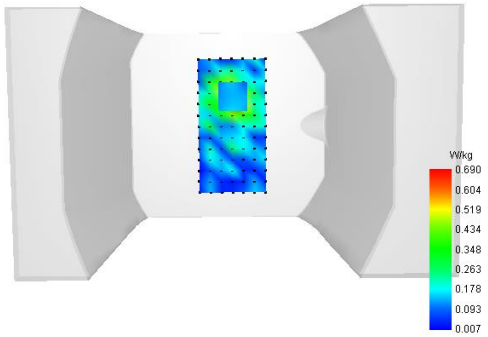
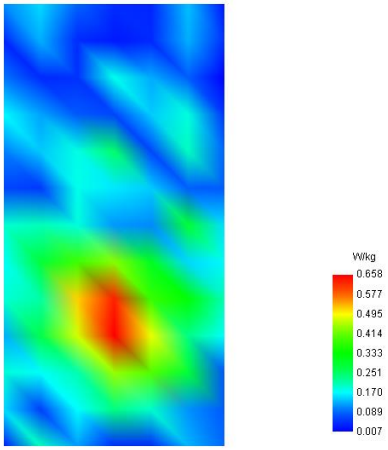
SAR 10g (W/Kg)	0.350
SAR 1g (W/Kg)	0.650
Variation (%)	-1.400
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.235	0.690	0.377	0.252	0.181



F. 3D Image

3D screen shot	Hot spot position
	

Plot 6
Date of measurement: 11/04/2024

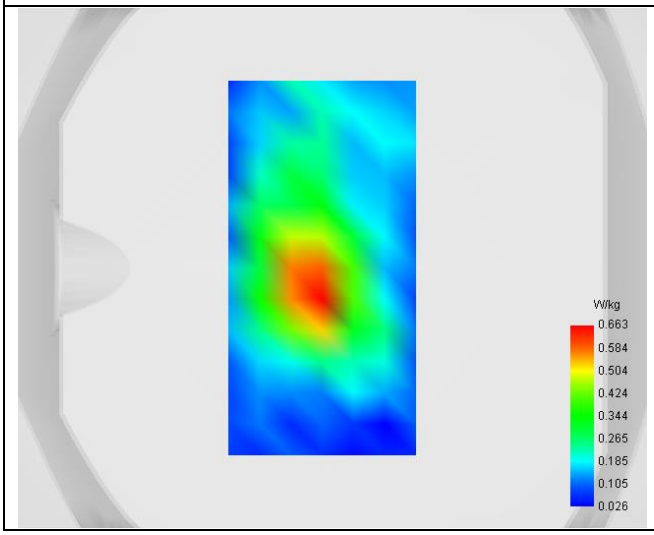
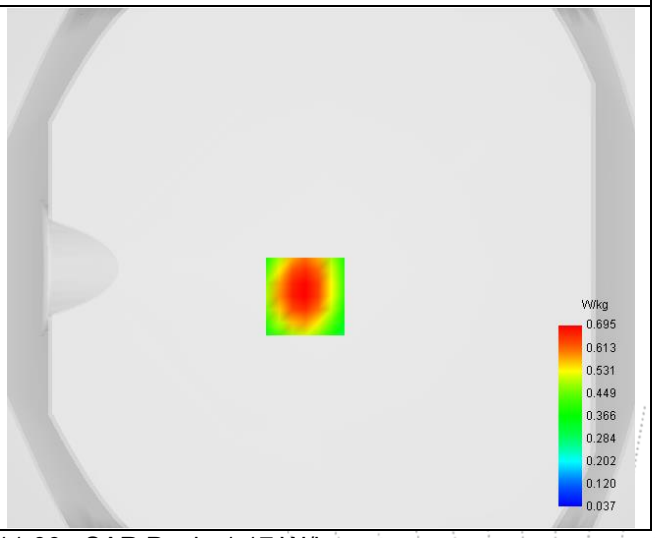
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.04
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	Band 2 (1900)
Channels	9262
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Frequency (MHz)	1852.400
Relative permitivity (real part)	40.132
Relative permitivity (imaginary part)	13.408
Conductivity (S/m)	1.362

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

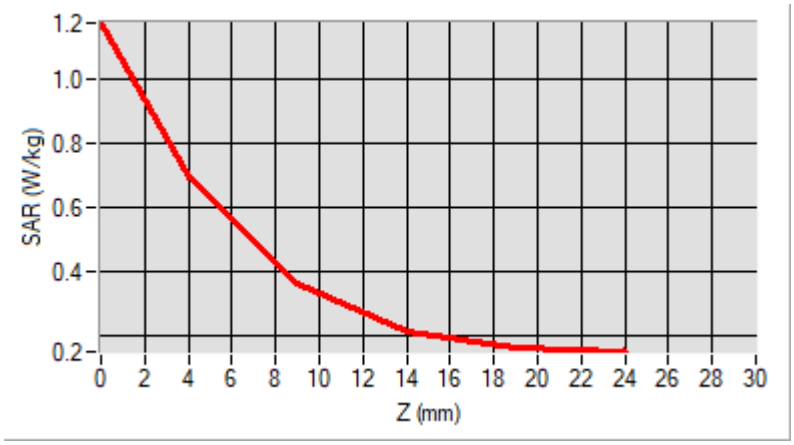
Maximum location: X=-6.00, Y=-11.00 ; SAR Peak: 1.17 W/kg

D. SAR 1g & 10g

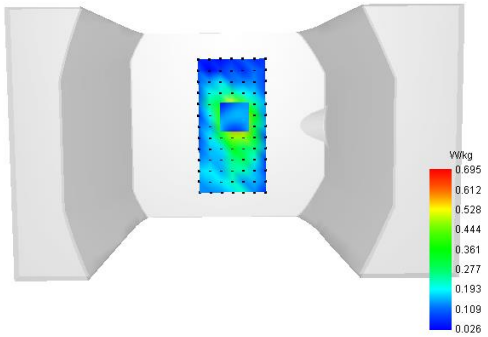
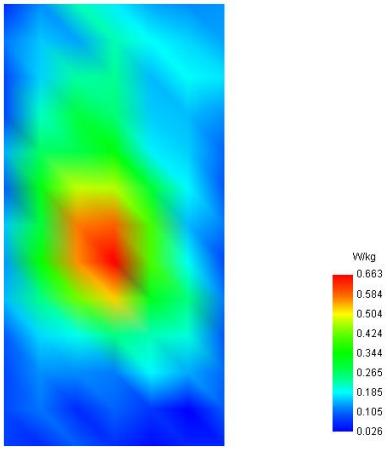
SAR 10g (W/Kg)	0.355
SAR 1g (W/Kg)	0.664
Variation (%)	-0.070
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.171	0.695	0.364	0.217	0.167



F. 3D Image

3D screen shot	Hot spot position
	

Plot 7
Date of measurement: 11/04/2024

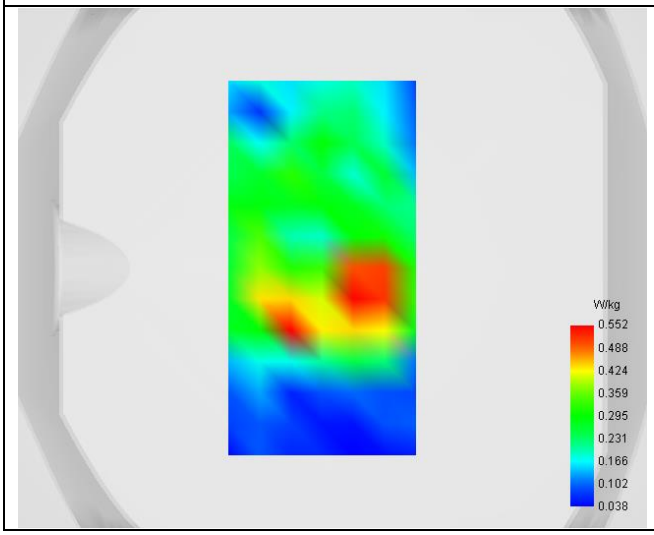
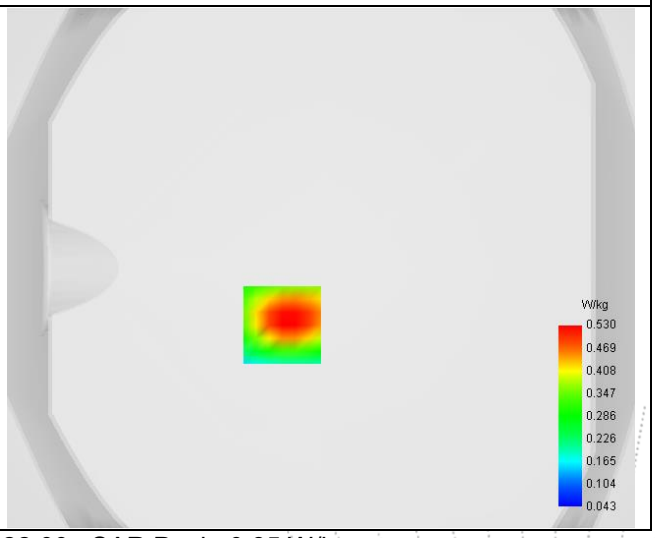
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.96
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	Band 4 (1700)
Channels	1450
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Frequency (MHz)	1740.000
Relative permitivity (real part)	39.155
Relative permitivity (imaginary part)	14.136
Conductivity (S/m)	1.349

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

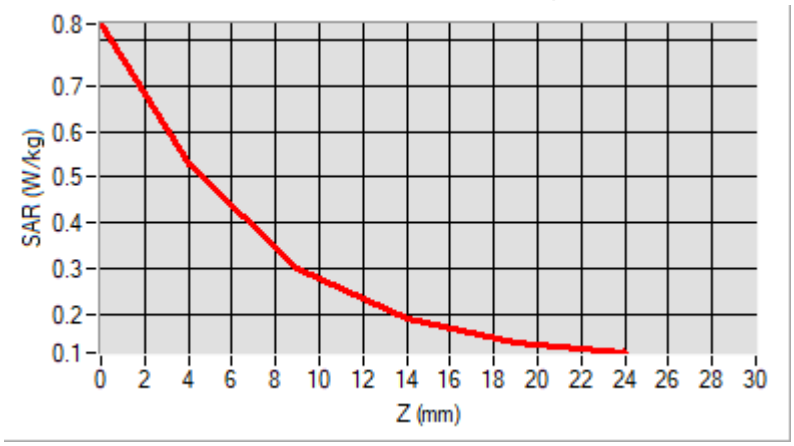
Maximum location: X=-15.00, Y=-22.00 ; SAR Peak: 0.85 W/kg

D. SAR 1g & 10g

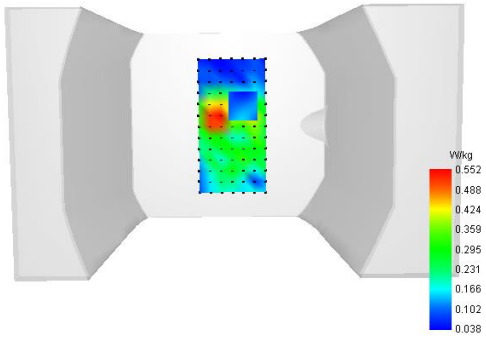
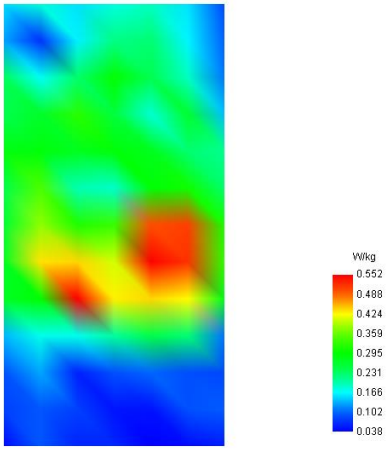
SAR 10g (W/Kg)	0.278
SAR 1g (W/Kg)	0.507
Variation (%)	1.520
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.835	0.530	0.302	0.189	0.140



F. 3D Image

3D screen shot	Hot spot position
	

Plot 8
Date of measurement: 28/04/2024

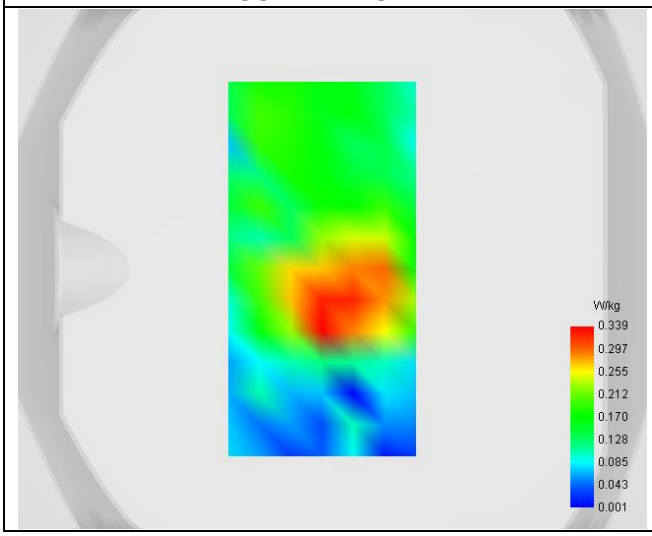
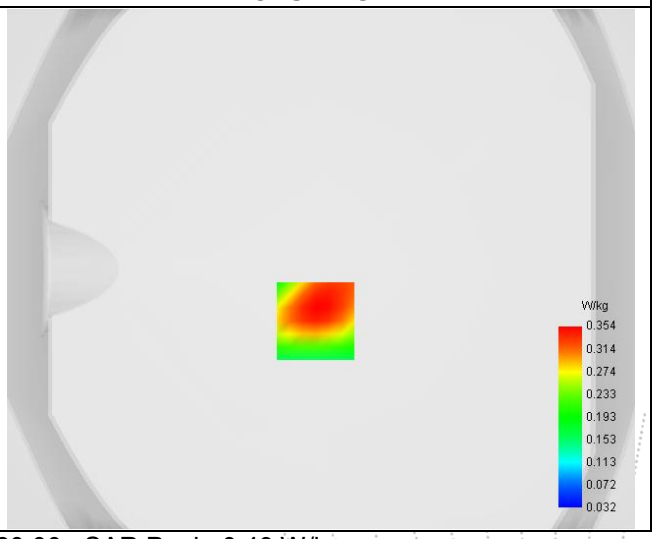
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.81
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	Band 5 (850)
Channels	Middle (4182)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Frequency (MHz)	836.400
Relative permitivity (real part)	41.037
Relative permitivity (imaginary part)	19.400
Conductivity (S/m)	0.869

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

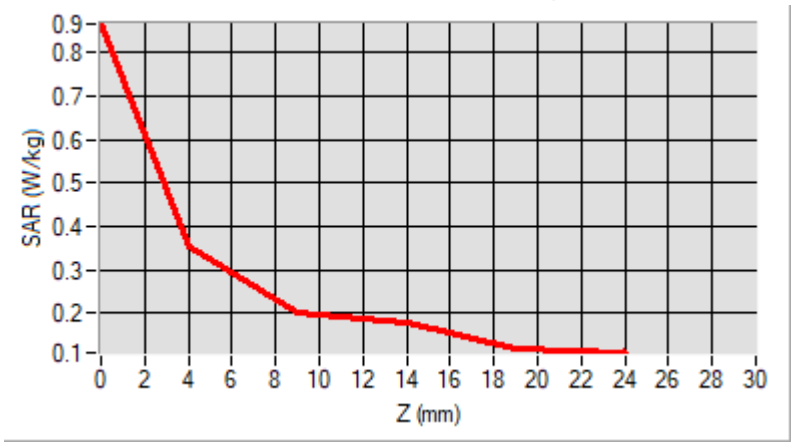
Maximum location: X=-2.00, Y=-20.00 ; SAR Peak: 0.49 W/kg

D. SAR 1g & 10g

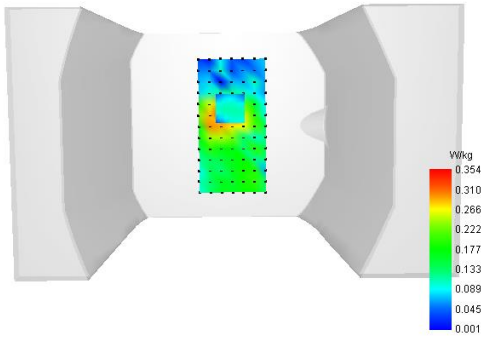
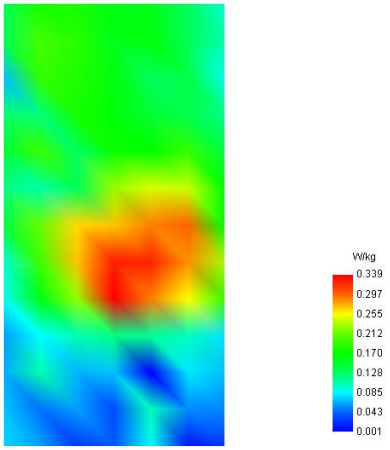
SAR 10g (W/Kg)	0.215
SAR 1g (W/Kg)	0.338
Variation (%)	-3.580
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.866	0.354	0.200	0.181	0.120



F. 3D Image

3D screen shot	Hot spot position
	

Plot 9
Date of measurement: 11/04/2024

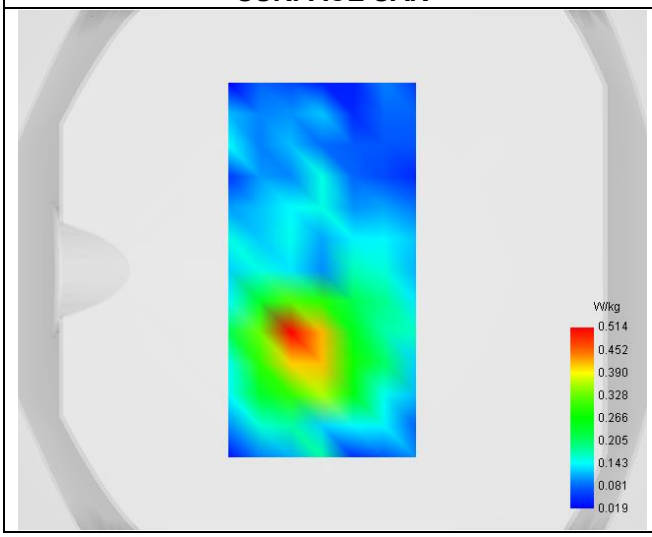
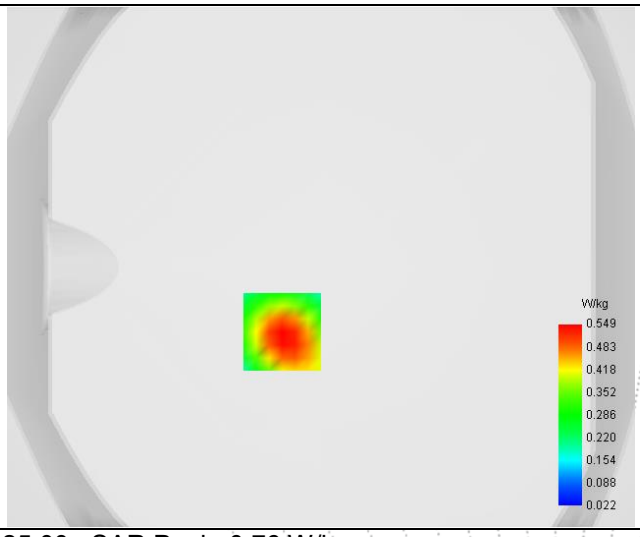
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.04
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 2
Channels	18700
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	5
RB size	20

B. Permitivity

Frequency (MHz)	1860.000
Relative permitivity (real part)	40.132
Relative permitivity (imaginary part)	13.455
Conductivity (S/m)	1.362

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

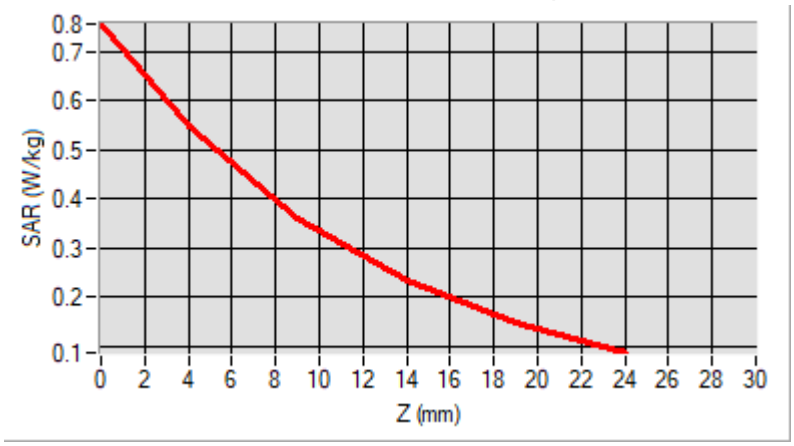
Maximum location: X=-15.00, Y=-25.00 ; SAR Peak: 0.76 W/kg

D. SAR 1g & 10g

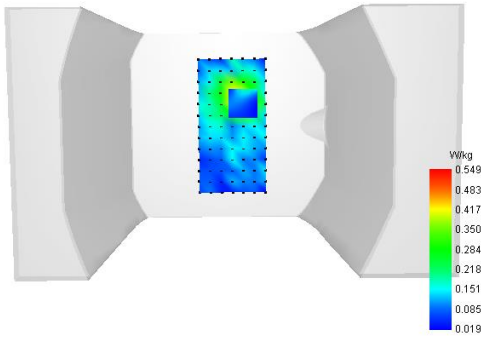
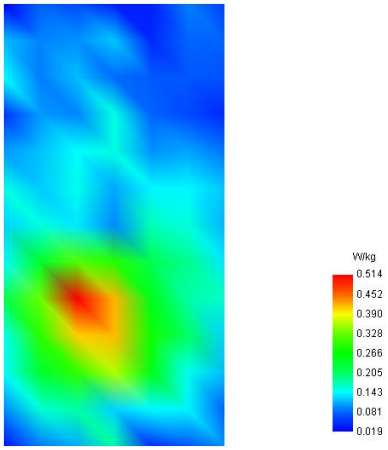
SAR 10g (W/Kg)	0.309
SAR 1g (W/Kg)	0.515
Variation (%)	4.200
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.757	0.549	0.361	0.233	0.148



F. 3D Image

3D screen shot	Hot spot position
	

Plot 10
Date of measurement: 11/04/2024

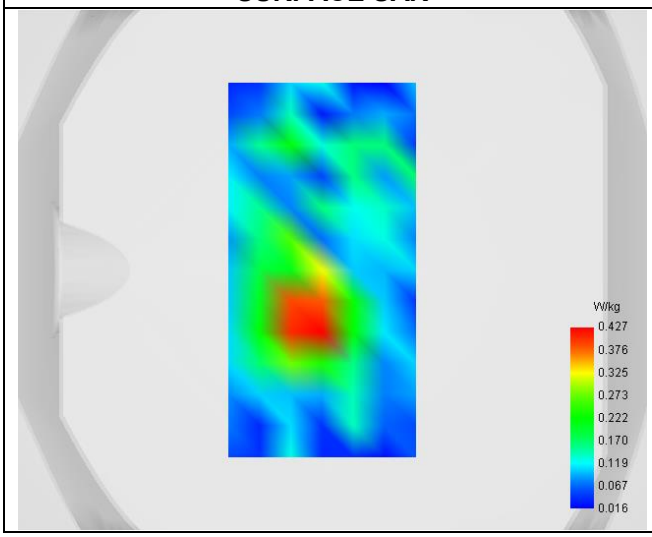
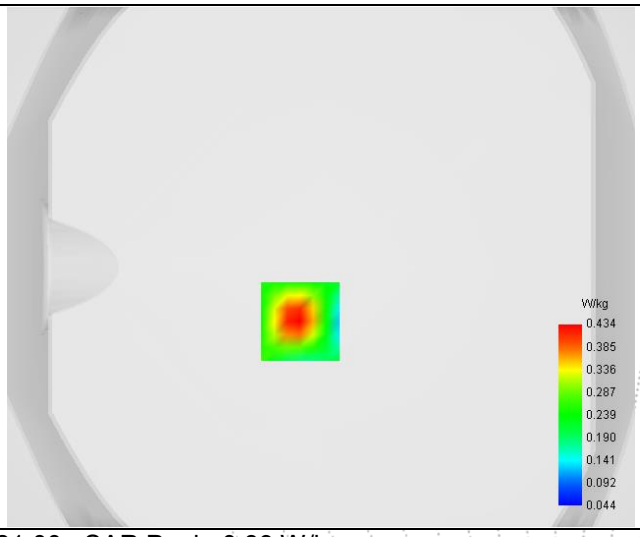
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.96
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 4
Channels	Middle (20175)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	5
RB size	20

B. Permitivity

Frequency (MHz)	1732.500
Relative permitivity (real part)	39.155
Relative permitivity (imaginary part)	14.153
Conductivity (S/m)	1.349

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

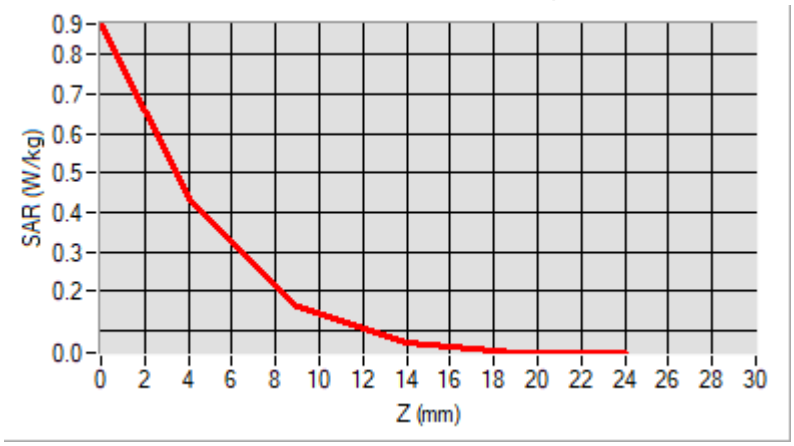
Maximum location: X=-8.00, Y=-21.00 ; SAR Peak: 0.89 W/kg

D. SAR 1g & 10g

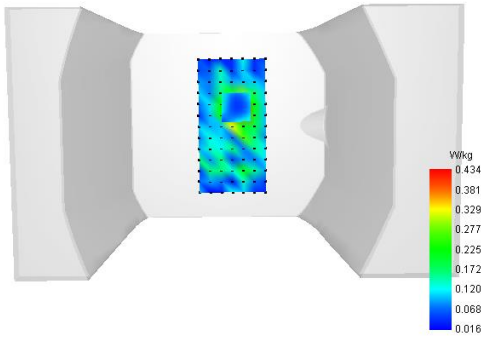
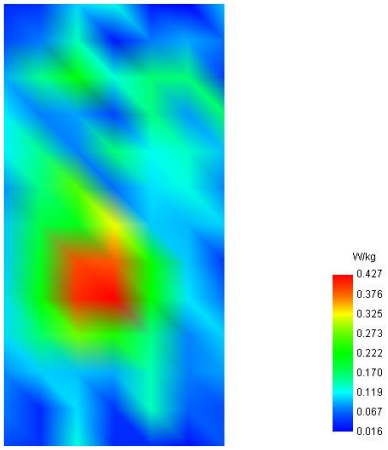
SAR 10g (W/Kg)	0.205
SAR 1g (W/Kg)	0.426
Variation (%)	-3.460
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.876	0.434	0.164	0.068	0.045



F. 3D Image

3D screen shot	Hot spot position
	

Plot 11
Date of measurement: 28/04/2024

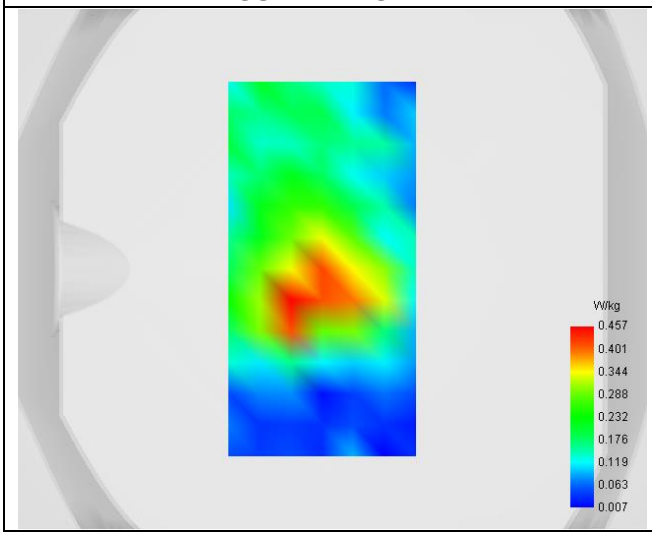
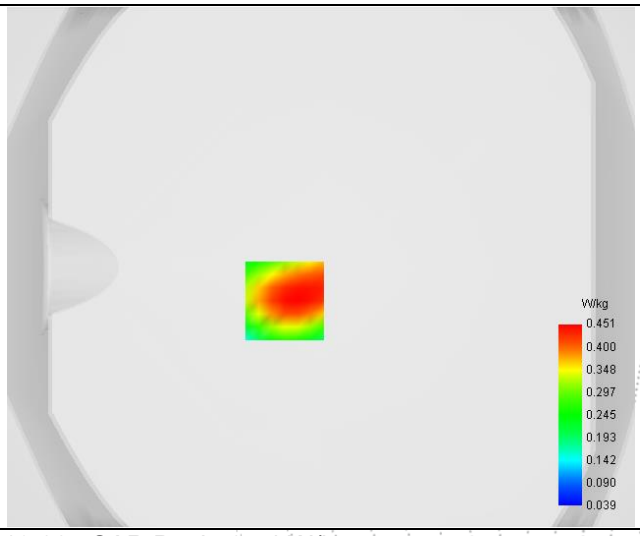
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.81
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 5
Channels	20525
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	5
RB size	20

B. Permitivity

Frequency (MHz)	836.500
Relative permitivity (real part)	41.037
Relative permitivity (imaginary part)	19.407
Conductivity (S/m)	0.869

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

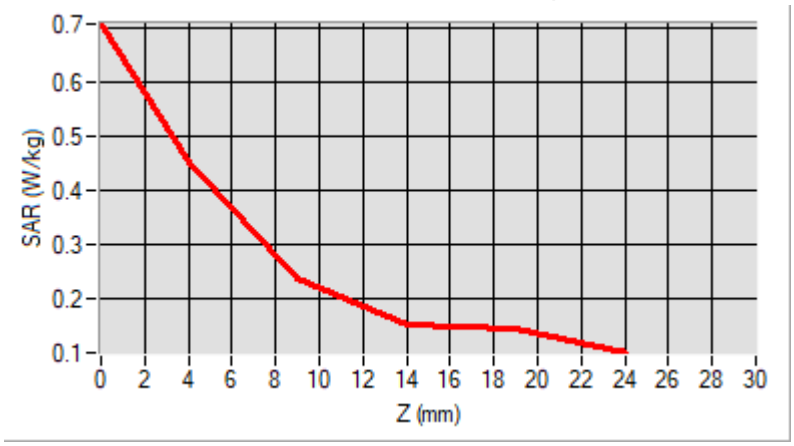
Maximum location: X=-14.00, Y=-13.00 ; SAR Peak: 0.74 W/kg

D. SAR 1g & 10g

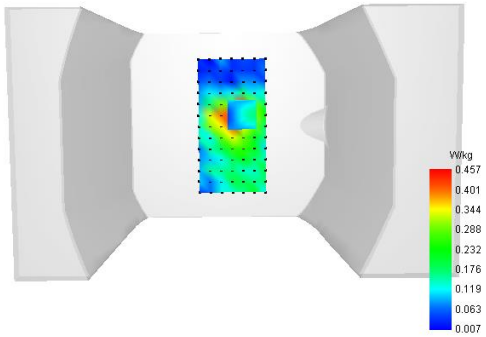
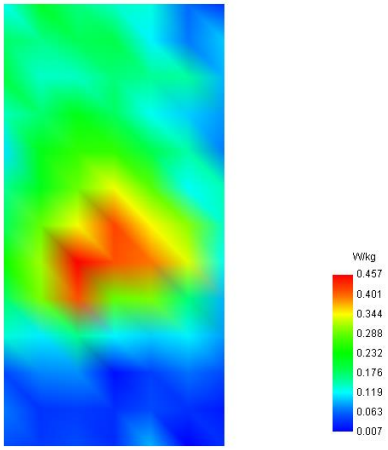
SAR 10g (W/Kg)	0.237
SAR 1g (W/Kg)	0.434
Variation (%)	3.630
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.706	0.451	0.238	0.151	0.143



F. 3D Image

3D screen shot	Hot spot position
	

Plot 12

Date of measurement: 13/04/2024

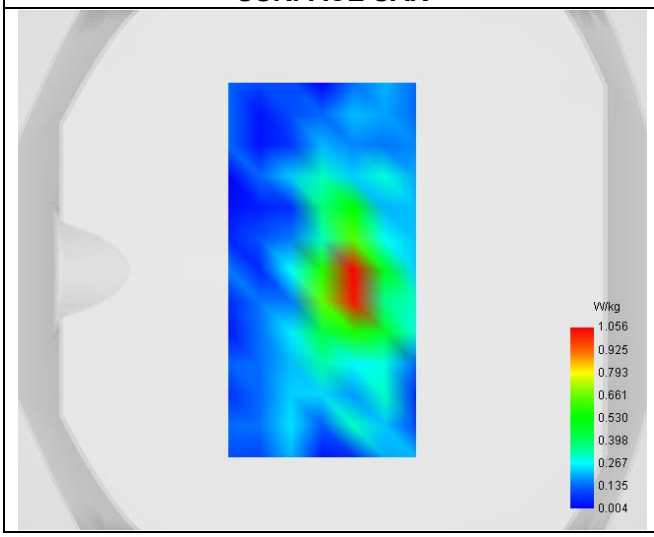
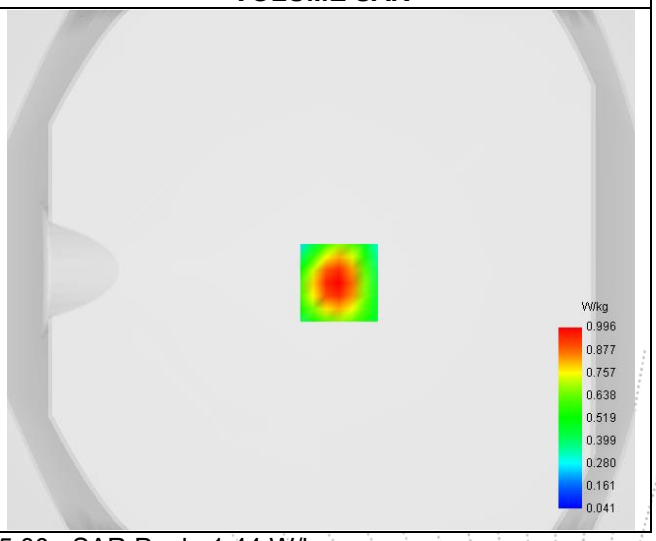
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.11
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 7
Channels	21100
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	5
RB size	20

B. Permitivity

Frequency (MHz)	2535.000
Relative permitivity (real part)	40.172
Relative permitivity (imaginary part)	13.345
Conductivity (S/m)	1.985

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

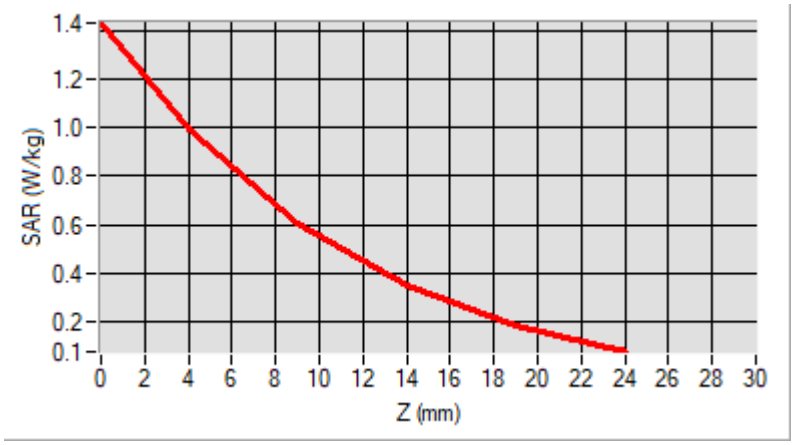
Maximum location: X=7.00, Y=-5.00 ; SAR Peak: 1.44 W/kg

D. SAR 1g & 10g

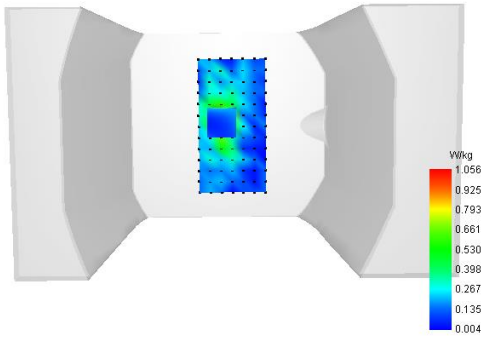
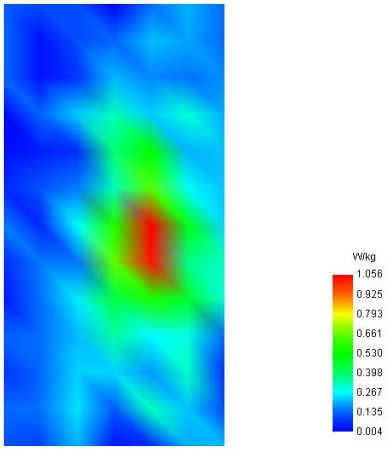
SAR 10g (W/Kg)	0.492
SAR 1g (W/Kg)	0.914
Variation (%)	2.650
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.435	0.996	0.603	0.344	0.178



F. 3D Image

3D screen shot	Hot spot position
	

Plot 13

Date of measurement: 28/04/2024

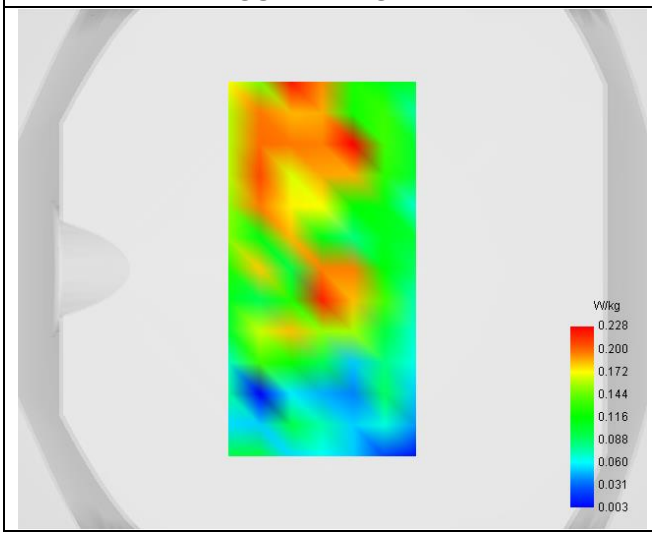
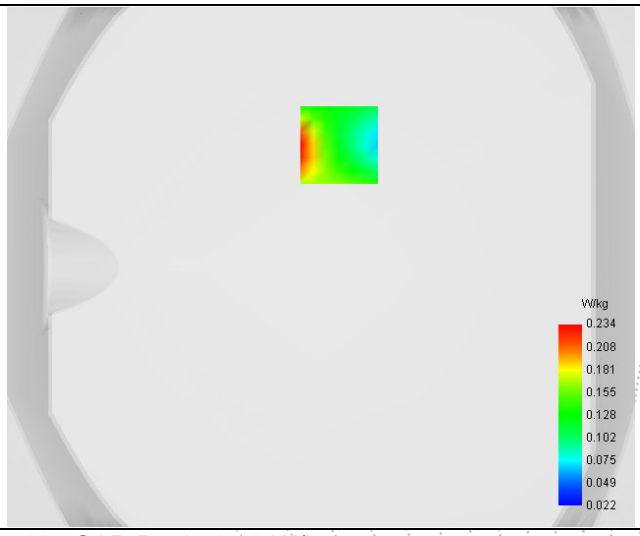
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.80
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 12
Channels	23060
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	5
RB size	20

B. Permitivity

Frequency (MHz)	704.000
Relative permitivity (real part)	43.138
Relative permitivity (imaginary part)	23.345
Conductivity (S/m)	0.898

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

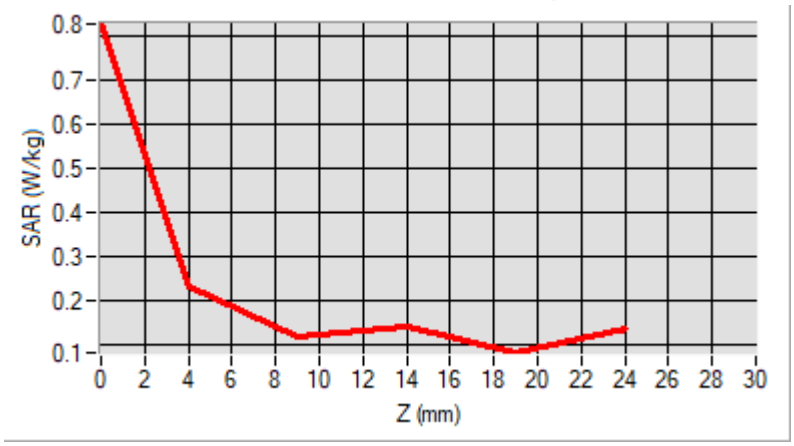
Maximum location: X=7.00, Y=47.00 ; SAR Peak: 0.33 W/kg

D. SAR 1g & 10g

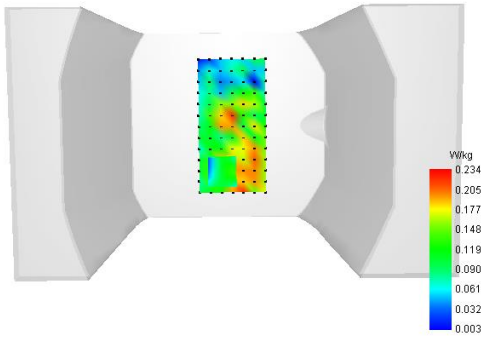
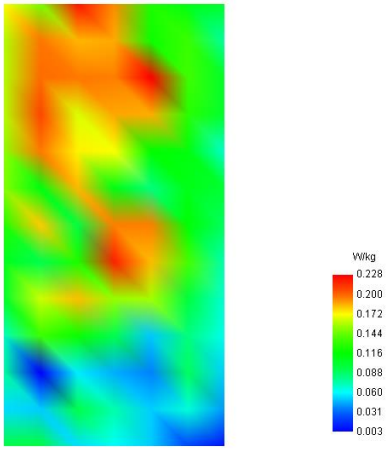
SAR 10g (W/Kg)	0.136
SAR 1g (W/Kg)	0.195
Variation (%)	-4.400
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.826	0.234	0.121	0.143	0.083



F. 3D Image

3D screen shot	Hot spot position
	

Plot 14

Date of measurement: 28/04/2024

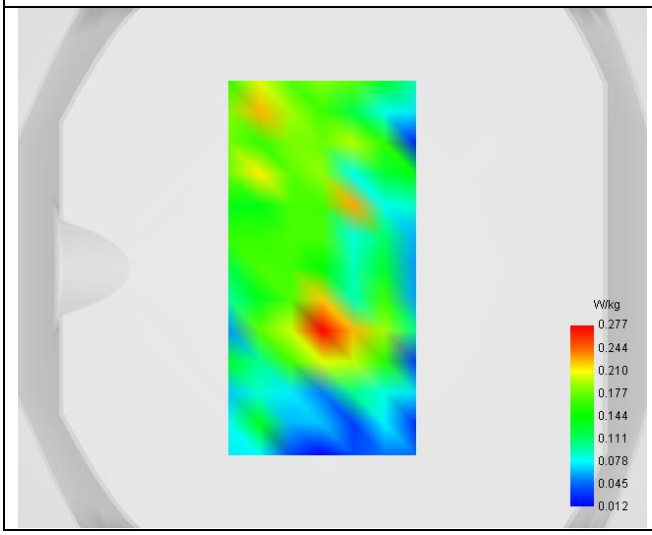
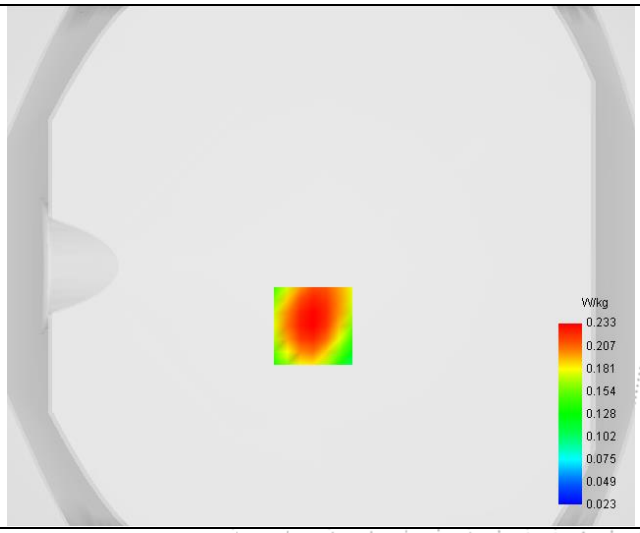
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.80
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 17
Channels	23800
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	5
RB size	20

B. Permitivity

Frequency (MHz)	711.000
Relative permitivity (real part)	43.138
Relative permitivity (imaginary part)	23.233
Conductivity (S/m)	0.898

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

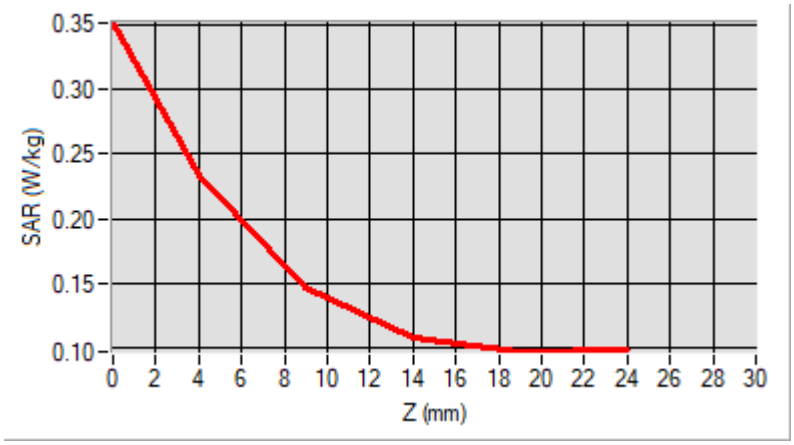
Maximum location: X=-3.00, Y=-23.00 ; SAR Peak: 0.36 W/kg

D. SAR 1g & 10g

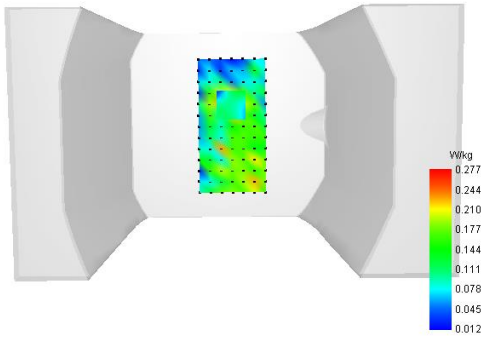
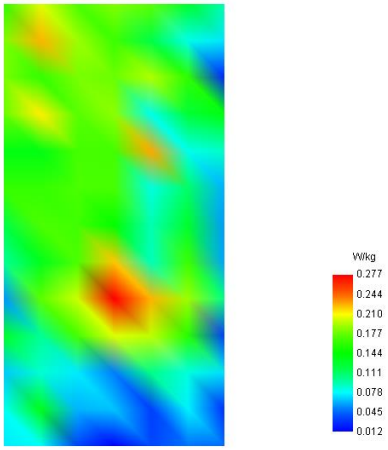
SAR 10g (W/Kg)	0.145
SAR 1g (W/Kg)	0.235
Variation (%)	-1.780
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.351	0.233	0.147	0.108	0.097



F. 3D Image

3D screen shot	Hot spot position
	

16. CALIBRATION CERTIFICATES

Probe-EPGO420 Calibration Certificate
SID750Dipole Calibration Ceriticate
SID835Dipole Calibration Ceriticate
SID1800Dipole Calibration Ceriticate
SID1900Dipole Calibration Ceriticate
SID2450Dipole Calibration Ceriticate
SID2600Dipole Calibration Ceriticate
SID5200Dipole Calibration Ceriticate
SID5800Dipole Calibration Ceriticate

COMOSAR E-Field Probe Calibration Report

Ref : ACR.199.1.23.BES.A

SHENZHEN BCTC TECHNOLOGY CO., LTD.
1 ~2/ F, NO. B FACTORY BUILDING, PENGZHOU INDUSTRIAL PARK, FUYUAN 1ST ROAD, TANGWEI COMMUNITY, FUHAI STREET, BAO'AN DISTRICT, SHENZHEN, GUANGDONG,CHINA
MVG COMOSAR DOSIMETRIC E-FIELD PROBE
SERIAL NO.: 2623-EPGO-420

Calibrated at MVG
Z.I. de la pointe du diable
Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE - FRANCE

Calibration date: 7/18/2023

Accreditations #2-6789
Scope available on www.cofrac.fr

Summary:

This document presents the method and results from an accredited COMOSAR Dosimetric E-Field Probe calibration performed at MVG, using the CALIPROBE test bench, for use with a MVG COMOSAR system only. The test results covered by accreditation are traceable to the International System of Units (SI).

COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.199.1.23.BES.A

	Name	*Function*	*Date*	*Signature*
Prepared by :	Cyrille ONNEE	Measurement Responsible	7/18/2023	
Checked & approved by:	Jérôme Luc	Technical Manager	7/18/2023	
Authorized by:	Yann Toutain	Laboratory Director	7/18/2023	

Yann Toutain ID Signature numérique de Yann Toutain ID Date : 2023.07.18 10:38:49 +02'00'

	Customer Name
Distribution :	Shenzhen BCTC Technology Co., Ltd.

Issue	*Name*	*Date*	*Modifications*
A	Cyrille ONNEE	7/18/2023	Initial release

TABLE OF CONTENTS

1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	2623-EPGO-420
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-7.5GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.228 MΩ Dipole 2: R2=0.238 MΩ Dipole 3: R3=0.230 MΩ

2 PRODUCT DESCRIPTION

2.1 GENERAL INFORMATION

MVG's COMOSAR E field Probes are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards.

Figure 1 – *MVG COMOSAR Dosimetric E field Probe*

Probe Length	330 mm
Length of Individual Dipoles	24.5 mm
Maximum external diameter	8 mm
Probe Tip External Diameter	2.55 mm
Distance between dipoles / probe extremity	12.7 mm

3 MEASUREMENT METHOD

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide recommended practices for the probe calibrations, including the performance characteristics of interest and methods by which to assess their effect. All calibrations / measurements performed meet the fore-mentioned standards.

3.1 SENSITIVITY

The sensitivity factors of the three dipoles were determined using a two step calibration method (air and tissue simulating liquid) using waveguides as outlined in the standards for frequency range 600-7500MHz and using the calorimeter cell method (transfer method) as outlined in the standards for frequency 150-450 MHz.